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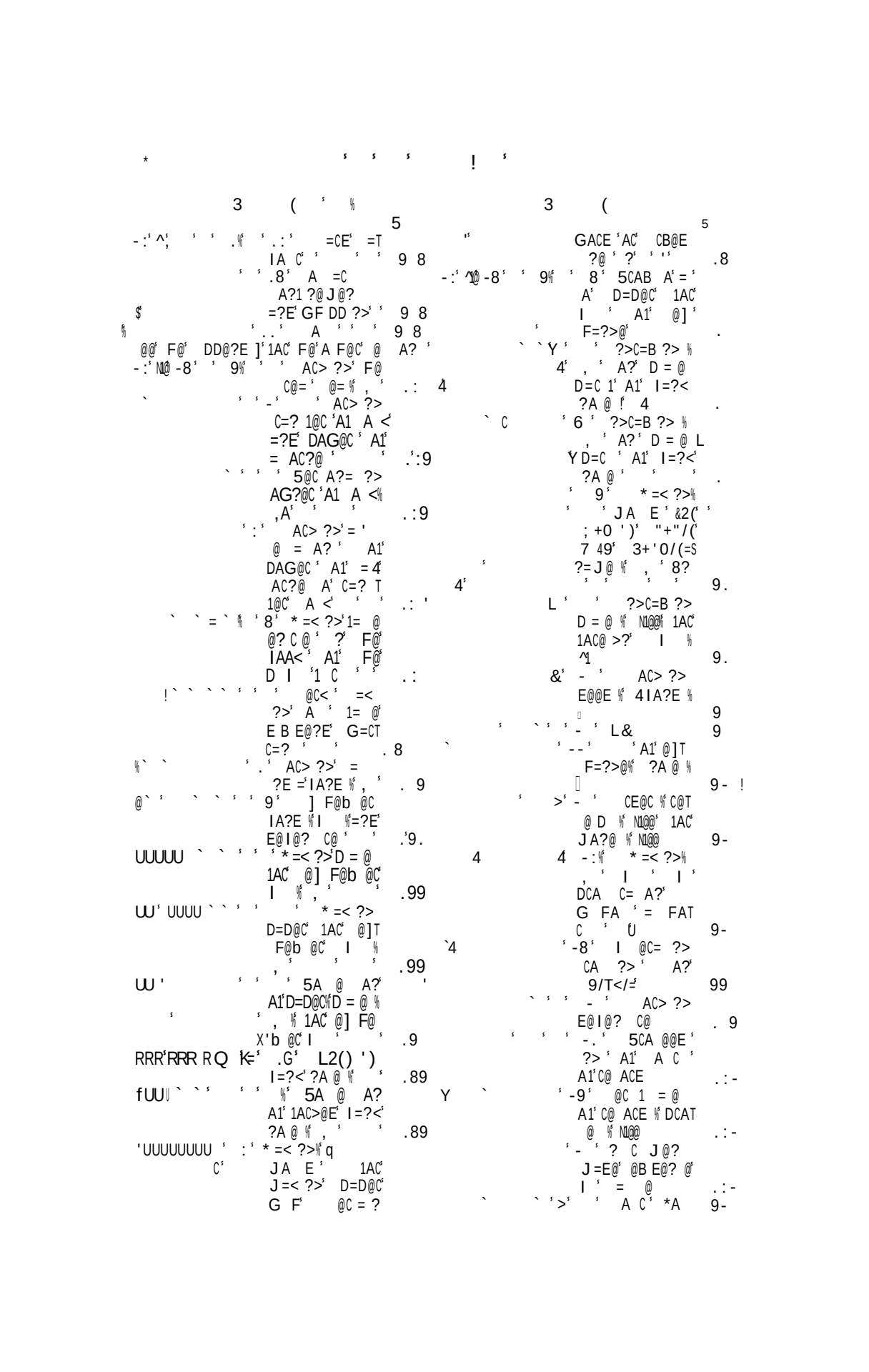

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+=9' /)'& G' /''M' 'INH 'YEY
I 'N]A ,' 'IAM
=#*2(' ħ.M' 2V'M'M'.IN' .GN AGA ADN
,,,' ₩'HA' 'Y. '
/)<=' '= IG' 'M'YG 'HHA
/9<&&S='1+=/ +*O'.A. 'AG.
/44*/42'' /V' & 'M' 'GAN 'HAG
*-732<*4' I.' 'YH NM.
/7/#' /)'& .' 'YHM' IGH
/7 **' /V' & 'M' 'IAE ENG'N.I'N.D'NG.'NHH
/7*+':' /)'& G' 2V' 'M'GEH' 'GDG GNG
/7 ; +'S='1+=/ +*&' 10'G.Y' '.GE
/< <+'' /V' & ' '!' '(A'
/742'' /)'& G' 22' 'AN 'EAG EYH
4b4b=' /V b 'GA ',' 'GYG
192*+=' /)'& .' 2V 'ZG.E' [.I.
192 =' /)'& 'L'A. IEY
192*=2'' &/V' & 1 4/:'G' <((''..HM 'A.D
RG' /+19'Y.M 'IY .DY
=9/44' /)'& Y 2V 'HGM' ','YHI
V2'' /V' 9 D' 'IIG' 'AA AY
2+0/' /)'& G' 'YGM' HEI
23*/' ':+;= D' +<'4'AN 'YMG
2 :2'S='1+=/ 2=4'.GN 'NI'.MA
2(;+'' /)'& 'AM. 'HDI
2&(=' /)'& N 'GI. 'NID
', /V' 'YN G.G
2 49S='1+=/ G' +=4' '.MG. 'N.M
2(49' /)'IX E' 2V' 'IHH' .YE
2(42'' /)'& E' 'YD.' '..G..I
E '.NY' 'ANG
Q' /V' 'A.M GMM
2(J+*' /)] 2V 'NA' 'H.H
<43(27'S='/+=/ 2=4'DY' 'GG

+4/=' /)'&' ' * /+(=' 'IAN' X' 'AEY
3(+'S='1+=/' G' 4('..II 'EGI
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::#' /)' :' G' /'' 'GYI IEY'DGN
):/'' /V' &' Y' '' 'YH.' ,' 'DDD
:&/:S='1+=/' +#*/#' 'DMG
*:9+;' /)'& G' /'' 'IDG 'AH
*J/ ='1+=/ 1 4/:'I' +<'4'GDI .DM .DI
;/+*#&' /7/** E' +=4'HYI , A.G'DIM
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G +=4 EGM
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D' ' ' ' YIE' % ' YE
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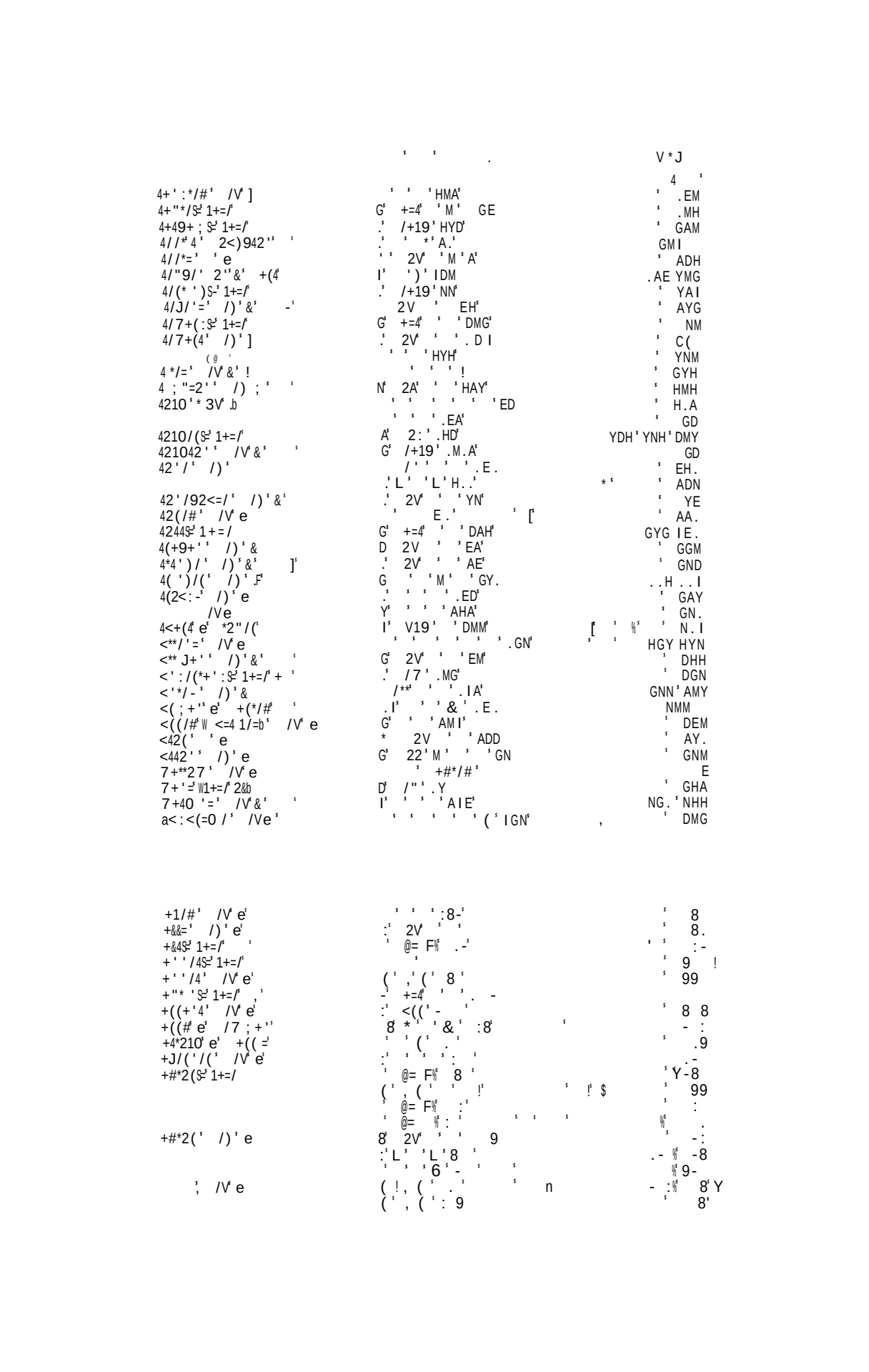

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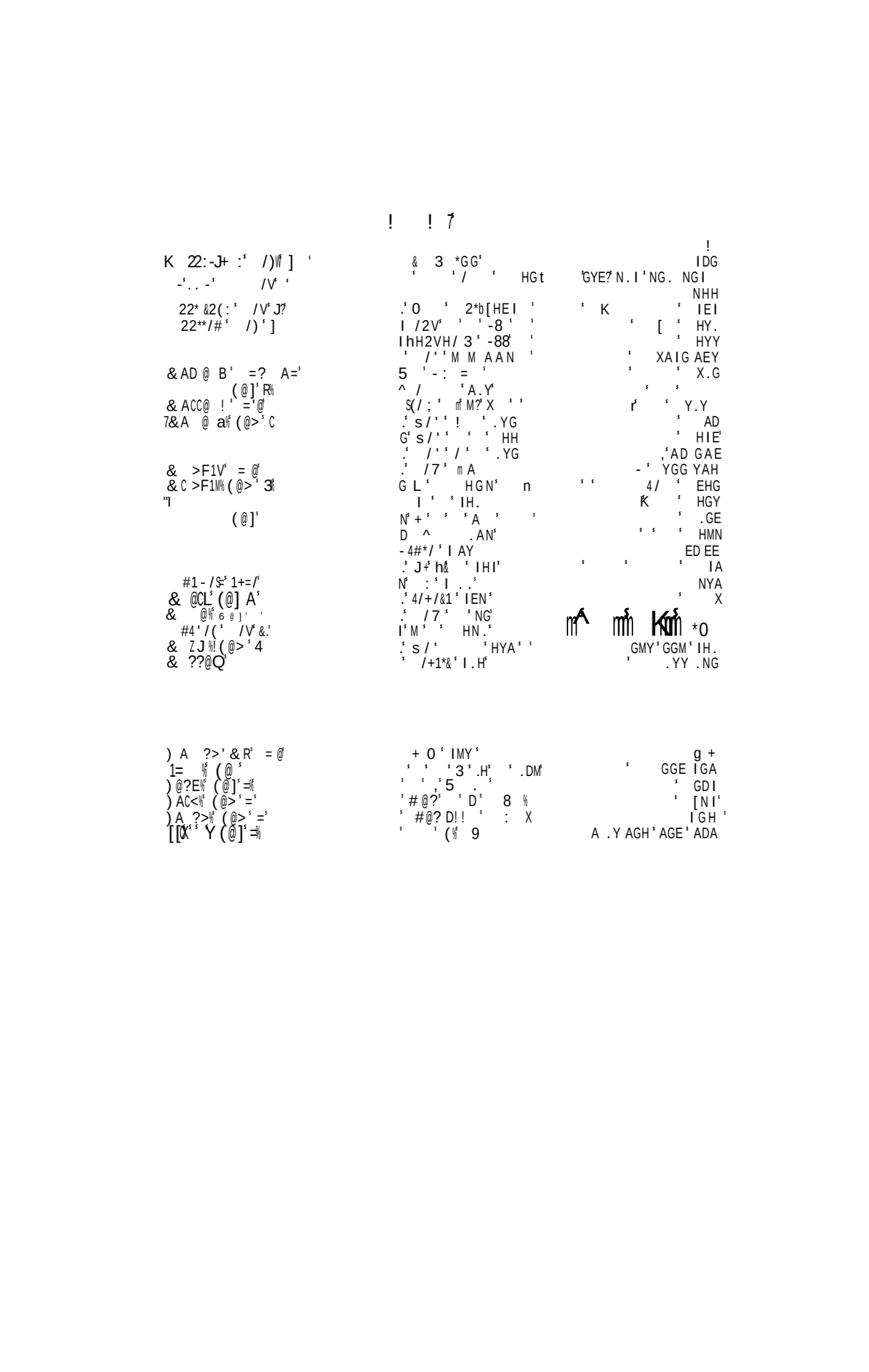

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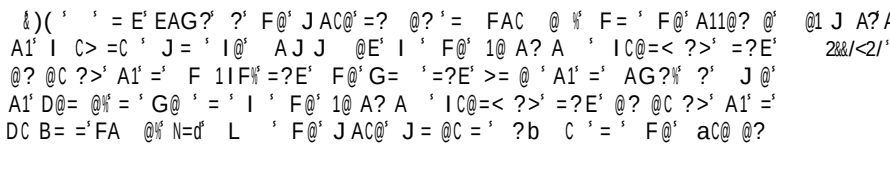

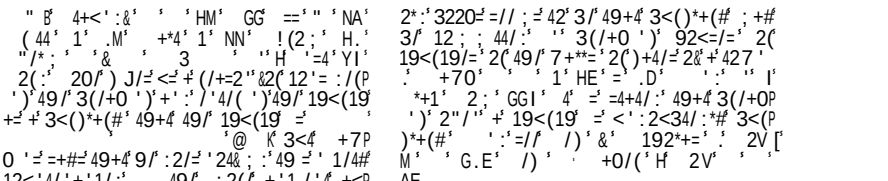

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& F@C@%‘ F@C@1A H@%‘ =‘ @ =C‘ G ?EAG%‘ GF F‘ G= ‘ IA=CE@E‘ D%‘ F=E‘ ?‘ ‘ =%CA ?E‘ =D@C C@‘ A1‘ A? E@C=I @‘ K@%‘ A‘ =E J ‘ >F ‘ ? A‘ F@

&6b‘ H‘ ’=4‘ YH‘ .‘ +*/‘ YIN‘ < ; DN‘ .‘ +70‘ ‘ ‘1‘ HE‘ =‘ .‘ I‘ *+1 2 ; ‘ GGI‘ G‘ +=4‘ ‘ ‘1‘ .A‘ =‘ .‘ "‘ IEI‘ <(‘ ‘ <=4‘ 4 4‘ 3 5.‘ =‘ .‘ 9/‘ 72(:‘ 3 ‘ =‘ =<""2=/ :‘ 42‘ 9+J/‘ 3// ‘‘ ‘4(2 : <1/ :‘ &(2 ; ‘ ! / (; + ‘ # 3# 49/‘ +V2 ‘ =? +’ :‘ 42‘ 9/‘ : / (J/ :‘ &(2 ; ‘ 49/‘ ! / (; + ‘ ‘ 3‘ +‘ 92<=/ ‘ +’ :‘ ‘ +‘ 49 /&‘ ‘ 49/‘ *+44/(‘ 72(:‘ 3/ ’)‘ &(2 ; ‘ 49/‘ +4 ‘ ‘ ‘ <(‘ ‘ <=4‘ 4 4‘ L 3 ‘ =‘ .‘ G 0+=4‘ ‘ ‘ M‘ .A‘ =‘ .‘ "‘ IEI‘ <4 (‘ &‘ "/* ; +‘‘ 49 ‘0=‘ 49+4‘ 49/‘ 72(:‘ 3 ‘ 7+=‘ 3(2<)94‘ 9/(/‘ 3# 49/‘ 2(P ; +’=‘ +=‘ 9/‘ :2/=‘ ‘24‘ & ‘ :‘ 4‘ + ; 2 ‘)=4‘ 49/‘ +V2 ‘ =? +’ :‘ 9/‘ =+#=‘ 49+4‘ 3 .‘ 2(3 ; 7/(/‘ = ‘ 1+**/ : ‘ O ‘ ‘ ‘ 7 ‘ .‘ ‘ 3 ‘ 3 ! ‘ 3 ‘ ‘ ! ‘ 9/‘ 1(; / ‘ 927/J/(‘ +’"/+(=‘ 42‘ 9+J/‘ 3// ‘‘ ‘24 1/ :‘ ‘‘ 2<(‘ /+(* /=4‘ *+7=‘ ‘‘ 49/‘ 12 ; P ; 2 ‘‘)/ ‘ <=‘ 2& 2&&/ ‘ 1/=‘ : / ‘ 2 ; ‘ +4/ :‘ P ‘ : K‘ +’ :‘ 3# 49/‘ + ‘ 1 / ‘4‘ *+7=‘ 2& +’<4 4=‘ +’ :‘ 2& /’ ‘ . ‘ 42‘ 9+J/‘ 3// ‘‘ "<’ =9+3*/‘ 7 49‘ : /+49‘ ‘ ! + ‘ <4 ‘ 1’ Y. ‘ /’ ‘ ‘ 1‘ .H‘ .‘ +*/’ YID‘ 1 4 ’) "/* ; ‘ !*2==’ 4 4‘ 7 : ‘ +’ :‘ 3 :‘ - 4‘ L 3 + ‘ ( ) ’+**#‘ 49/‘ 1 (1< ; ‘ =4+’ 1/‘ 2& .‘ J 19‘ =‘ ‘27‘ 2& 49/‘ J/(# /==/ ‘ 1/‘ 2& 49/‘ 2&&/ ‘ 1/ ‘ :2/=‘ ‘24‘ =// :‘ 42‘ * +J/‘ 3// ‘‘ ; +4/ (+*‘ ? +’ :‘ 49/‘ ; +*) ’ 4#‘ 2& 49/‘ 1(; /‘ 7+=‘ =<""2=/ :‘ 42‘ 12’ = =4 ; /(/*#‘ ‘‘ 49/‘ ’J+= 2 ‘‘ 2 ‘‘ 49/‘ ( ) 9‘ 2& 9+3 4+4 2 ’ ‘ 42‘ 79 19‘ 49/‘ *+7=‘ 2& ’)*+’ :‘ 9+J/‘ +*7+#=‘ =9/7 ‘‘ +’‘ /=" /1 +*‘ (/)+(: ‘ 9/(/ ‘‘ +)(// ’)‘ 7 49‘ 49/‘ =/ ’4 ; / ’4=‘ 2& +’1 / ’4‘ 2 ’/’ +=‘ /V"(/==/ :‘ ‘‘ 49/‘ 72(:=‘ 2& ‘ 1/(2‘ ? Q ‘ ‘ ‘ O ‘ ‘ 3 ‘ :‘ O ‘ ‘ * O ‘ & ‘ # ‘ ‘ ‘ ‘ M ‘ 3 ‘ ‘ ‘ ‘

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IC@=< ?>% 1Zd
F@' DC A?@C' >A ' ? A' F@' DCA @ ACH' @ =C% I ' 1 ?>' D' ='F@=B ' "/' ')'
>C= ?>% =?E' ? A' F ' FA @' I ' 1AC ?>' AD@?' =' G ?EAG' GF F' AD@?@E' G ?EAG %
A?' F ?>@ % =?E' G= ' 1= @?@E' I ' GA' ?= % GF F' = @E' = ' G@E>@ %
I ' GA E' AD@?' I ' D F ?>' ;' DA?' =' = @' C@ @CB@E% F@' Z E>@ ' F@ E'
F@' 1AC ?>' AD@?' F@' G ?EAG' A' I@' =' 11 @?' IC@=< ?>% 1 3
F@' DC =?@C' @? @C@E' =' F ? @' I ' D F ?>' EAG?' F@' DD@C' = F'
A1' =' G! ?EAG% GF F' F=E' ?A' 1= @? ?>% =?E' G= ' <@D ' ?' ' D = @'
I ' F@' D @ ' G@ >F ' A? ' F@C@' G= ' =?' A @C' F @C% I ' ' G= '
?A ' D ' A' ' = @' G= ' C@ @CB@E' DA?' F@' b @ A?% GF@ F@C' F@'
D F ?>' EAG?' F@' = F' G= ' =' IC@=< ?>% =?E' = ' F@' Z E>@ ' GH@C@'
?=? J A ' F= ' ' 3= ' 1 3
04' C= ?>' =' G ?EAG% GF F' ' F ' EAG?' A @% I ' ?A ' 1= @?@E%
R% IC@=< ?>% = FA >F' F@C@' I@' =' F= D% GF F' A E' F=B@' I@@?'
1= @?@E' A' <@@D' F@' G ?EAG' EAG?% NJd
' 1' =' G ?EA' ' I@' D=C ' AD@?% I !' ?A ' 11 @? ' A' = ' A'
=E J ' =' D@C A?% F@' C= ?>' ' F >F@C% A' = ' A' =E J ' =' D@C A?% '
?A ' =' LIC@=< ?>% 1 3' ' GF@C@' =' b =C@' A1' > = ' ?' =' F@?

Wwb' /V' ' /7 =' G' ' ' ' YGE' 1' .A' =' H' "' IED
+<)9+' ' ' - W#B' /)' ' (:' N' ' ' ' II' 2=+' P
"7B /V' ' "( ))=' ' ' ' 23' HAD T</4'
":B 7/' S' 1+=/' :' /7 ' HA' "/(' W4b' /V' ' +**' ' :' ' HAA
+#*/#' ' 79/49/(' 4' 3/' +" 2<4/(' 2("B /V' ' + '/=' ' ' ' IA.
''/(' :22(' +' :' =/' /V' S' +7(/'1/' I 1&3 /V' ' #+ ; =' D' ' ' ' II. '
M' ' ' GH.' +' :' /V' &' 2(:+' ' D' ' ' ' +(0' ' ' ' +' :' 2*/ :)/'
IHG WXb' /V' ' ; 49' ' ' ' ' ' ' ' '
WYd' :' +*/' AG' H' '=4' YI' <; ' EM' .DE
:' +70' ' ' 1' HE' =' Y' G' +=4' '

' G

G 1 ELG%' FCA >F' GF F' 1@' DC A?@C ' @? @C@E%' F=E' I@@?' DC@B A ' ICA<@?' I ' = E@? %' =?E' F= 1' A1' 'G= ' A ' = ' F@' J @' GF@?' F@' DCAT @ AC' @1 ' F@' FA @%' =?E' F@' =D@C C@' G= ' 11 @?' A' =E J ' =' F=?E%' F ' ?A ' A' @?=I @' =' D@C A?' A' D ' F ' =C J ' ?%' A' = ' A' ?EA' F@' 1= @? ?>' A1' F@' = @ J @? %!= J E' A?@' A1' F@' DC A?@C ' FC ' F ' =C J ' FCA >F' F@' =D@C C@%' F@C@I ' IC@=< ?>' A ' F@' C@ E @' A1' F@' b =C@%' =?E' F=B ?>' A' EA?@%' F@' C@ J AB@E' F@' 1= @? ?>D1' F@' = @T J @? ' ', E@C A?%' %' =?E' 5= @ A?%' %' @? @C = ? ?>' =' EA I %' 1CA J' F@' E 11 ' F@ ' F=E' A' E ?> F' = 1= AC ' F@' = @' A1' @? =C> ?>' =' FA @' = C@=E ' @] ?>%' 1CA J' F@' @? =C> ?>' =?' =D@C C@%' I ' 1 ?>' D' 1 C F@C' F@' = F' A1' =' G ?EAG%' ?' F@' DC@ @E ?>' = @%' I J @E' F@' = @' A' F@'Z E>@ %' GFA' G@C@' ?=?4 ?A ''A1' AD ? A?' F= ' F ' G= ' =' 11 @?' IC@=< ?>%' ?A ' I ' IC = =' '!' F@' C@ E @' A1' F@' D=?@%' I ' I ' ?1= @? ?>' =?E' AD@? ?>' J 'G ?EAG$ NAd =?E' ' F= ' ? @' I@@?' = E' EAG?' = ' @=C' =G' F= ' =' D@C A?%' GFA%' A?' 1 ?E ?>' =' FA @' ?' =' EAAC' AC' D=?@' A1' > = %' D ' F ' F=?E' ?' FCA >F' F@' FA @' A' C@ J AB@' F@' 1= @? ?>' A1' F@' EAAC' AC' G ?EAG%' =?E' A' >= ? ' =E J =? @' ? A' F@' DC@ J @ %' ' > ' A1' =' IC@=< ?>' ? A' F@' FA @%' NDd

((/+ ')' 9# /'4/(')' 3# +' 19 44 ' /#

' G= ' A? @' EA I @E' GF@ F@C' =' F @1%' >@ ?>' ? A' =' FA @' I ' C@@D ?>' EAG?' F@' F J ?@ %' A E' I@' 1A ?E' > ' A1' I C> =C %' = ' F@' FA @%' I@ ?>' AD@?' ?' F= ' D=C %' A E' FA ' I@' = E' A' F=B@' I@@?' = = ' ICA<@?', ROB' I ' ' G= ' =1 @CG=CE ' =>C@@E%' F= ' F' =?' @?'C ' ? A' =' FA @' G ' = J A ?' A' =' IC@=< ?>%' A?' F@' >CA ?E%' F= ' F@' FA @' ' = ' J F' A @E' = ' F@' ?= C@' A1' F ?> ' G ' D@C J %' NCd F@' DC A?@C' >A ' F' = ' F@' AD' A1' =' F J ?@ %' =?E' >A ' EAG?' A' Z ' = IAB@' F@' J =? @ D @ @' A1' =' CAA J ' A?' F@' >CA ?E' 1 AAC' ' = @' G= ' C@ @CB@E' DA?' F@' b @ A?%' GF@ F@C' F ' G= ' =' IC@F< ?>' =?E' @? @C ?>' A1' F@' EG@ ?> FA @', =?E' GA' A1' F@' Z E>@ ' FA >F ' ' G= ' ?A %' I@ = @' F@' D=C ' A E' ?A ' I@' A? E@C@E' = ' I@ ?>' ?' F@' %EG@ ?> FA @%' ?A ' F=B ?>' >A ' I@ AG' F@' F J ?@ D @ @' ', I ' F@' @?' A F@C' Z E>@ ' F@ E' A F@CG @%' A?' F@' >CA ?E' F= ' F@' F J ?@ ' G= ' '' + (4' A1' F@' EG@ ?> FA @%' F= ' F@' >@ ?>' ?' = ' F@' AD' G= ' =' IC@=< ?>' A1' F@' EG@ ?> FA @%' =?E' F= ' F@' AG@C ?>' F J @ 1' I F@' D=C ' G= ' =?' @? C ' G F ?' F@' EG@ ?> FA @%' N d

(/+0 ')' 79/(' 49/(/' 7+=' '2 '4/(2(&+=4/' ')

F@' D = @' GF F' F@' D H A?@C' @? @C@E' G= ' =' J %' ?E@C' F@' = J @' CAA1%' =?E' G F ?' F@' = J @' C =>@%' = ' F@' EG@ ?> FA @$ FCA >F' F@' J ' F@C@' G= ' =?' AD@?' @? C=? @%' AC' >= @CB= %' =D=I @' A1' =E J ?>' G=>>A? %' =?E' ? @?E@E' 1AC' F@' D CDA @' A1' A=E ?>' F J' J AC@' @= ' G F' 1 A C' I ' J @=? ' A1' =' =C>@' =D@C C@' AC' F= F%' AB@C' F@' >= @G= %' A J J J@= ?>' G F' F@' 1 AAC' =IAB@', =?E' F ' =D@C C@' G= ' A @E' I ' 1A E ?>' EAAC ' G F' F ?>@ %' GF F' 1@ ' AB@C' %' =?E' C@ J = ?@E' A @E' I ' F@ C' AG?' G@ >F ' & ' G FA ' =? ' ?T @C AC' 1= @? ?>', A' F= ' D@C A? ' A?' F@' A E@%' ?E@C' F@' >= @T G= %' EF E' D ' ' F@ J ' AD@?' = ' D @= C@%' I ' =' J AE@C= @' @] @ A?' A1' C@?> F ' F@' DC A?@C' @? @C@E' F@' J ' ?' F@' ? >F %' I ' A' D FT ?>' AD@?' F@' 1A E ?>' EAAC %' G F' F@' ? @? A?' A1' @= ?>' 1 A C,' =?E' @C%' %' F@ E' F ' A' I@' =' 11 @?' IC@=< ?>%' N d

WMd' /V' ' 23 '=2' ' ' ' ' ' ' ' HGD' - [<' B' +, ,#+' ' =# 1210' D' V2' DG' "/(' W.D' .' +*/' AAG WX,D (2 ; "4' HG' WAb' +*4' GAH' .' +7O

' ' /' HE' =' Y' G' +=4' ' M' 1' .A =' G' "' IEA " B' /V' ' (1/' ' ' ' IAM " B' (27 'S= 1+=/' G' +=4' ' ' 1' .A =' E' "' IED'

=B ?>' A @?' ?' @' FA @' A' F@' B= @' A? ' A1' 9 %' =' b @ A?' G= ' J=E@%' GF@ F@C' F@' IC@=< ?>' F@' =C@=' >= @' G= ' IC@=< ?>' F@' EG@ ?> FA @' A' = ' A' A? @' I C> =C ;' =?E' = ' F@C@' G= ' ?A' 1C@@' D= =>@' ?' J @' A1' @@D' 1CA J' F@' =C@=' ? A' F@' FA @%' F@' Z E>@ ' F@ E' ?=? J A ' F= ' @' IC@=< ?>' G= ' ?A ' =' IC@=< ?>' A1' F@' EG@ ?> FA @%' 7!83' 9

' =9<44/ (32V & F 'C@' F@' DC A?@C' ICA<@' AD@?' =' IA]%' @E' = ' =' F @C IA]%' GF F' D=C ' DCAZ@ @E' 1CA J' F@' G= ' A1' F@' FA @%' =?E' =EZA ?@E' A?@' E@' A1' F@' G ?EAG' A1' F@' FAD%' GF F' E@' A1' F@' G ?EAG' G= ' DCA @ @E' I ' GAAE@?' D=?@ ?>%' ?@E' G F' D = @ ' Va1 CA ?;' ' G= ' F@ E' F= ' F@' F @C IA]' G= ' ?A' D=C ' A1' F@' EG' ZZ ?> FA @' 163

9/' 3(/+0 ')' ; +# 3/' 2& +<' ' '/(:22(2& 49/' 92<=/ F@' IC@=< ?>' C@b @' A' A? @' =' I C> =C %' ' ZA ' A?1 ?@E' A' F@' @] @C?= ' D=C ' A1' F@' FA @%' I ' J = ' I@' A ' ' ' ??@C' EAAC%' =1 @C' F@' A11@?E@C' F= ' @? @C@E' I ' J @=? ' A1' =' D=C ' A1' F@' FA @' GF F' F@' F= ' 1A ?E' AD@?' F %' 1' '@? @C' F@' FA @' A1' ' ?' F@' ? >F ' J @%' F@' A G=CE' EAAC' I@ ?>' AD@?%' AC' I ' =?' AD@?' G ?EAG%' =?E%' GF@?' G F ?' F@' FA @%' C?' F@' <@ ' A1' =' F= J I@C' EAAC%' AC' ? = F' %' G F' ? @? ' A' @= %' F ' G ' I@' I C> =C %' 1:3' 04' GF@C@' F@' DC A?@C ' G@? ' ? A' F@' FA @' A1' F@' AA<' = ' @CZ@=? H' ??%' ?' @@ C@@ %' A' @= %' =?E' =< ?>' F@ C' ADDAC ? %' DD@E' D' = C %' D <@E' AD@?' F@' A <' A1' =' F= J I@C EAAC%' ICA<@4AD@?' =' F@ %' =?E' A @' D = @%' ' G= ' => H@@E' F= ' @' D < ?>' AD@?' F@' A <' A1' =' F= J I@C' EAAC' A @E' F@ J ' A1' F@ C' @C> %' FA >F' F@' IC@=<T ?>' AD@?' F@' F@ ' GA E' ?A ' F=B@' EA?@' A' 1 3' ?E' ' G ' = A' =J A ?' A' I C> =C ' 1' =' @CB=? ' ?' F@' ? >F ' J @' AD@?' F@' F= J I@C' EAAC' A1' F ' J = @C' AC' J C@ %' GF@ F@C' = F@E' AC' A F@CT G @' 1= @?@E%' =?E' @? @C' 1AC' F@' D CDA @' A1' AJ J ?>' ' CE@C' AC' C=D@%' AC' G F' =? ' A F@C' 1@ A? A ' E@ >?' ;' AC' 1' =? ' A F@C' D@C A?%' AE> ?>' ?' F@' = J @' FA @%' AC' ?' =' D I ' ??%' AD@?' =?E' @? @C' =?A F@CH ' EAAC%' G F' F' @B ' ? @? %' 1#3' ' 1' F= ' I@@?' b @ T A?@E' G!F@ F@C%' 1' =' AE>@C' ?' =?' ??' FA E%' ?' F@' ? >F ' J @%' AD@?' F ' F= J I@C' EAAC%' @= ' >AAE %' =?E' >A' =G= %' F@' A11@? @' GA E' I@' I C> =C ' ;' A?' F@' >CA ?E' A1' F ' F=B ?>' =' < ?E' A1' D@ = ' DCAD@C ' =?E' ? @C@ ' ?' F ' F= J I@C%' =?E' F@' AD@? ?>' A1' F ' AG?' EAAC' I@ ?>' F@C@1AC@' ?A' IC@=< ?>' A1' F@' ??<@@D@CH' FA @%' 1 3

QS' =' 42' 49/' 3(/+0 ')' 2& 1<"32+(:= 1 '& V/ :' 42' 49/' &(//92*: ' ' @=C' F= ' F@' IC@=< ?>' AD@?' A1' =' F@ %' AC' IA]%' I ' =' F @1' GFA' F= ' @? @C@E' I ' J @=? ' A1' =?' AD@?' EAAC' AC' G ?EAG%' ?A ' =' < ?E' A1' IC@=< ?>' GF F' G ' A? @' I C> =C %' I@ = @' F' =C @ ' =C@' ?A' D=C ' A1' F@' FA @ ' 1 ; 3 ' F@' b @ A?' G F' C@ D@ ' A' F@

W=B /V + +J =' ' +# /# ' ' ' /' 42 ' ' 1 4/ :' G +=4' ' ' 1' .A' =' I' ' HGG "' IEE' ! (+#$=[+=/' .' 4(' IE. ' < ; ' " B /V + ' /' D' ' ?' CA-.' 2(:' EG' EI' +1' 3(' 4 4' L 3 5' W b' /' ; +' n ' ' +(0' ' ' ' 2**+' : ' /) ' + /' ; 2<49' E' 2V' ' ' HIO' ' ' (' (2==' 9/' 792*/' &+14=' '' 49/' /+4 ') ' ' 79/(/' +' =/(J+' 4 3 & =4 2"/'' (/ "2(4' +(/' '=/(4/ : ' 4' =' '24' =4+4/ :' 49/' : 22(2& +' =92'" '' 49/' ') 94' '' 2(:/(79/49/(' 49/' 32V' 9+ :' + ' #' 12 ; ; <' 1+4 2 '' 42' =4/+#' ; 2 ' /#' &(2 ; ' 49/' 4 ** 7 49' 49/' '= : /' 2& 49/' 92<=/ ' 2(79/49/(' W1B .' +*/ ' AAI ' b 4' <"2 '' 49 =' 4' =' 49/' 3(/+0 ')' 7+=' =<19' +=' 42' ; +0/' + '' 23=/(J/ : ' 49+4' &' + ' 249/(' " /(=2 '' =92<* :' 2"/ '' ')' '42' 49/' '= : /' 2& 49/' 92<=/ ' ' 2"/ ' =<19' *2 :) / ($' : 22(3<()*+(2<=*#' 4' ; <=4' 3/' *+ .' 42' 3/' 49/' ; + ' = 2 '' 2& 49/' ' ! ' '0// "/(' + ' :' 49+4' +')</=4' ; +# 12 ; ; 4' $" B .' +*/ ' AH' .' +70' ' ' 1' HE *+(1/ '# 2& 49/' 49 ') =' : /* J/(/ :' 42' 9 =' Y' 29 ' =2 ' $' 1+=/ ' G' +=4' ' ' 19+()/ ' G' +=4' ' ' 1' .A' =' I' "' IEI' 1' .A' =' I' "' IEI +' :' =/ /' /) ' &.' 9//*: 2 ' ' : ' 24/' W.b W1B '2' ' .' +*/ ' AGI W wb' .' +*/ ' AGH' YGI ' c AA' .' +=4 " B .' +*/ ' AAH' AAI ' I' *+1' 2 ; ' ' 1' .A' =' A' "' I E' IEN GGD' ')*2=/$' 1+=/ ' G' ' '

Ź FC@=D' & @Cu'ec' A @b @? @4A1' B A @? @' AJ J@? @E'AC' FC@= @?@E' ?' ACE@C' A' AI = ?' @? C=? @' A' ='FA @%' F@' AG?@C%' @ F@C'1CAJ' =DDC@T F@? A?'A1' F@' B A @? @%' AC' ?' ACE@C' A' C@D@ ' %' AD@? ' F@' EAAC%' =?E' F@' F @1' @? @C %' F' @? C ' G ' = J A ? ' A' =' I C@=< ?>' ?' =G' ; NJd' 1AC' GF F' AJ@'F=B@' > B@?' = ' =' Z' = A?' F= ' F@' AD@? ?>' A1' F@' EAAC' I ' F@' AG?@C%' I@ ?>' A = A?@E' I ' F@' 1@ A? A ' = @J D ' A1' F@' F @1%' ' = ' J F' J D =I @' A' F J ' = ' 1' ' F=E' I@@?' = = ' EA?@' I ' F ' AG?' F=?E %' 1 3' & F@C@' F@' @B E@? @' G= %' F= ' F@' 1=J ' G F ?' F@' FA @' G@C@' 1AC @E' I ' FC@= ' =?E' ? J E= A?%' A' @ ' ?' F@' A 1@?E@C %' FA J D A?%' %' A E' F@' Z C %' F= ' = A >F' F@' EAAC' G= %' @C= %' AD@?@E' I ' A?@%A1' F@' 1=J %' @ %' 1' F' AD@? ?>' DCA @@E@E' 1CAJ' F@' ? J E= A? ' A1' FA @' GF='G@C@' G FA %' =?E' 1CAJ' F@' 1AC @' F= ' F=E' I@@?' @E%' <?A < ?>' = ' =1 ' 'C@=< ?>' F@' G ?EAG %' = ?>'A ' =?E' ? ?>' DA?' F@' EAAC' I@ ?>' AD@?@E%' =?E' 1 C ?>' A1'> ? %' 1' ?E@C F@ @' C J =? @ ' F@' D@C A? ' G F ?' G@C@' ?E @E' A' AD@?' F@' EAAC%' ' G= ' = ' J F' =' I C@=< ?>' I ' FA @' GFA' J =E@' @' A1' F' ? J E= A? ' A' DC@B= ' DA?' F@ J ' A' A' AD@?' %' = ' 1' F@ ' F=E' = = ' I C ' F@' EAAC' AD@?%' NAd' ' 1%' DA?' =' I=C@' = = ' DA?' =' FA @%' F@' AG?@C' 1 ?>' A ' F ' JA?@ ' A' F@' F @B@ %' ' G ' ?A ' I@' I !> =C ' ; NDd' FA >F' 1' F@' JA?@ ' G@C@' =<@?' D' ?' F@' AG?@CH' DC@ @? @%' ' ' =EZ? @E' F= ' ' GA E' I@' CAII@C N d' ?E' FA >F' F@' = = ' G@C@' A' A? E@C=I @' = ' A' I C@=<' =' FA @' ?' F@' FA @' ; @ ' 1' F@C@' G@C@' ?A' @? C ' 1 ' F@' F @1%' I ' A? ' =' = ?>' =G= ' A1' F@' JA?@ ' FCAG?' A ' A' F J ' I ' F@' AG?@C%' F@' A11@? @' A E' ?A %' ' FA E' @@J%' I@' I C> =C %' FA >F' @C = ? ' CAII@C ' @"3' %

#&(+<:' & F@C@' =?' = ' ' EA?@%' ! '*"6>#&' 2! ' F@' =G' > B@' ?A' I@?@1 F@C@A1' A' F@' D=C ' F ' 1' F @B@ %' F=B ?>' =?' ? @? ' A' CAI%' C= @' F @' =?E' C %' =?E' IC ?>' F@' A? =I @%' A' GFAJ' F@' AG?@C' AD@? ' F@' EAAC%' =?E' F@ %' GF@?' F@ ' AJ@' ?%' I ?E' F@' A? =I @%' ' =?E' CAI' F@' AG?@C%' ' ' I C> =C %' 1 3' ?E%' DA?' F@' =J@' DC ?T D @%' F@' >@ ?>' DA @ A?' A1' =' EG@ ?> FA @' I ' =' Z E>J @? ' =>= ? ' F@' = = ' @Z@ AC%' AI = ?@E' I ' 1= @' =1 E=B %' G FA ' =? ' A A C' A1' @%' =?E' F@?' C 1 ?>' F@' FA @%' G= ' C @E' A' I@' G F ?' F@' = @' =>= ? ' IC@=< ?>' F@' FA @%' =?E' ' @= ?>' F@' >AAE' F@C@ ?%' "B A' 1' =' J =?' >A' A' ?' =' FA @' ?E@C' DC@ @? @' A1' F=B ?>' =' @=C F' & =CC=? %' AC' A1' I@ ?>' = FAC @E' A' J =<@' =' E C@ %' =?E' I ' F@ @' J @=? ' AI = ?' =E J =? @%' ' %' 1' EA?@' ?' F@' ? >F ' J @%' =' 11 @?' IC@=< ?>' =?E' @? @C ?>' A' A? @' I C> =C %' AC%' 1' EA?@' ?' F@' E= ' J @%' FA @ IC@=< ?>%' 1>A

R B' 2(+"4' HG' " B.' .' +*/' AAH' G +=4' ' ' /' .A' =' G' "' IEY W]b' .']70' ' M' ' HE' =' D /6' 7+**27' 92 ; =2' ' 2(0' +'<+(#' .E.H' ' +#*/#' ' 9/' "(=2' /(=' 7/(/' 12' J 14/ : ' +' :' /V/P 1<4/ : " B' .' +70' ' ' ' HE' =' H %OB' < ; ' E.' G' +=4' ' ' 1' .A' =' G' "' IEY " B' .' +*/' AAA' 9<4' 9/' =+#=' 49+4' =2 ; /' 9+J/' 9/*:' 4' 3<()*+(#' 492<)9' 49/' 49 /&' 'JJ/(' /' 4/(/:' 49)' 92<=/' ? +' :' 49+4' 4' =' (/"2(4/:' 42' 9+J/['3//'' =2' +:6<:)/:' 3# +<' :/(=$ 19 /&' 3+(2' ' (2 ; "4' H.' ' 32(:' +*/'=<362 '=' 42' 49 =' :214 '/' O .' +' :' 1/(4+ 'Fx ' +=' +' "+(4' 2&' 49/ =4+4/ ; /' 4' 2&' 49 - 1+ =/' =' 49+4' 49/(/' 7+=' ' 5' '42' 49 - 2<=/ ' +' :' +=' +' /' 4(# =' +=' 7 **' "(/=/' 4*#' 3/' =9/ 7 ' ' +=' /==/' 4 +' +' "+(4' 2&' 49)' 2&&/' 1/' +=' 49/' 3(/+0 ')' 4' =// ; = : && 1<*4' 42' : =12J/(' 49/)(2<' :' 2'' 79 19' 4' 12<*:' 9+J/' 3// '' (<*/:' 42' 3/' 3<()*+(#' 9/' /: 42(' 2&' 2(:' +*/' W/ : ' .EMMb' =4+4/=' '' +' '24/' 49+4' 4' 7+=' +:6<:)/:' 3# 2'4+)<)/' 19 /&' 6<=4 1/' 2&' 49/' ' +' :' 49+4' +<' :/(=' 2'*# (/P *+4/ :' 4 ' W=b' H' '=4' Y I' ,' +*/' AAG' AAH' <;' E.' (2 ; "4' HG' /*' II' EG' .' +70' ' ' 1' HE' =' .M' I' *+1' 2 ; ' GGY W b' L+((/S' 1+=/' /*' IH C]b' /(' <(' '' ! +=12)' /S' 1+=/' :' /+19' GEI

8 'L 3 5' 12 3' B

IA <' >@ ' I@' A F@C' @CB=? ' A ' A1' F@' G= %' =?E' =E J ' F@' DC T
A?@C ' A?' =' 1 C@' @B@? ?>' ?' F= ' @B@? ?>' @B@C=' DA @J@?'
G@C@' @ C@ @E' ?' F@' FA @%' =?E' F@' >CAA J ' F@?' G@? ' =?E' 1@ F@E'
AF? A?' A' F@' FA @;' F@' >CAA J ' 1 @E' F@' = F' A1' F@' < F@?'
EAAC%' =? ' @ ' AF? A?' ?' 1 F? A?' G@? ' D' = C %' =?E%' = ' F@'
G= ' = IA ' A' AD@?' F@' EAAC' A1' F@' CAA J ' GF@C@' F@' DC @ ACH' CA?'
F@ ' G= ' E@DA @E%' F@' G= ' @ C@E' I ' F@' DA @%' =?E' A <@E' D'
?' =' CAA J ' ' 1@G' J ? @ ' =1 @CG=CE ' F@' >CAA J ' ICA >F ' A?@ '
A' F@' FA @%' =?E' @ ' F J ' ?' I ' AD@? ?>' F@' EAAC' 1AC' F J ' A?@ '
G@? ' ? A' F@' I= <' < F@?%' =?E' AA<' 1CA J ' F@' D = @' I= <@ ' A?T
= ? ?>' F@' D = @' ?' b @ Z? ' ' G= ' F@ E ' F= ' F@C@' G= ' ?A'
F' I H@=< ?>' = ' A' A? @' =' I C> =C ' ; 1AC% A >ZC' F@' >CAA J '
=DD@=C@E' A' A? C' G F' F@' DC A?@C %' F@' C@= ' = E' ?A ' A' A? C%'
=?E%' ?' = ?>' ?E@C' F@' E C@ A? ' A1' F@' DA @%' F@' J ' I@' =<@?'
A' I@' = ?>' ?E@C' F@' E C@ A? ' A1' F@' DCA @ AC%' =?E' F@C@1AC@'
F@' DC A?@C ' G@? ' ?' = ' =' EAAC' GF F' G= ' =G1 ' AD@?' " @ F@C' A1'
F@' DC A?@C ' F@C@1AC@' G= ' > ' A1' I C> =C %' =?E%' = ' AF? A?'
G= ' ?' AE ' = ' F@' J @' F@' D = @' G= ' =<@?' I ' A?@ %' F@' G= '
?A ' > ' A1' F@' =C @? ; I ' A?@ ' G= % A?B @E' A1' @= ?>' F ' '
D = @%' 1<3'

#=/(J+'4= ' ' = E%' F= ' 1' =' @CB=? ' ? = F' >' EAAC%' AC' C?' =' ' @ ' ?' =' EAAC' A1' F ' J = @CH' FA @%' =?E' @= ' DCAD@C ' A ' A1' F@' CAA J ;
F' AD@F ?>' A1' F@' EAAC%' I@ ?>' G F ?' F ' C %' ' ?A ' =' IC@=< ?>$
I ' F= ' 1' =' @CB=? ' IC@=<' AD@?' =' EAAC%' GF@ F@C' A G=CE' AC' ?G=CE%'
N= ' =' A @ %' E %' AC' A ? ?>' FA @%d' =?E' @= ' >AAE %' F' AD@?T
?>%' ?A ' I@ ?>' G F ?' F ' C %' G ' = J A ? '% A' =' IC@=< ?>' A1' F@'
FA @%' @ F@C' G F ?' F@' = @ ' C@ = ?>' A' F@' IC@=< ?>' A1'
EG@ ?> FA @ ' ?' F@' E= ' J @%' AC' G F ?' F@' =G' A1' I C> =C %' N d
&49/' 3' & F' C@ D@ ' A' F@' @? @C ?>' ?@ @ =C ' A' A? @' I C> =C ;
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12 '=4 4<4/' +'
3<()*+(# ' '=>C@@E%' F= ' =? %' F@' @= %' @? C '@ F@C' G F F@' GFA @' AC' =? '
D=C ' A1' F@' IAE %' F=?E%' AC' 1AA %' AC' G F' =? ' ? C J @? ' A1' G@=DA?%'
? CAE @E' 1AC' F@' D CDA @' A1' AJ J ?>' =' 1@ A? %' G ' I@' 11T
@? ' 1#3' F %' GF@C@' F@' DC A?@C%' ?' F@' ? >F ' J @%' ' =' FA @'
?' F@' G ?EAG' F @C ' A1' F@' DCA @ ACH' FAD%' GF F' G= ' D=C '
A1' F@' EG@ ?> FA @%' =?E' D ?>' F ' F=?E' FCA >F' F@' FA @%' AA<'
A ' G= F@ ' =?E' A F@C' F ?> %' GF F' F ?>' ?' F@' FAD%' G F ?' F '
C@= F%' ' G= ' FA E@?' A' I@' I C> =C %' N@d A%' 1' =' F @1' IC@=< ' F@'
G ?EAG' A1' =' FA @' ?' F@' ? >F ' J @%' G F' =?' ? @? ' A' @= %' =?E'
D ' ?' =' FAA<' AC' A F@C' @?> ?@%' A' C@= F' A ' >AAE ' ; AC' D ' =' D A '
?' = ' F@' G ?EAG' G F' ? @? ' A' < ; F ' ' I C> =C %' FA >F' F '
F=?E' I@' ?A ' G F ?' F@' G ?EAG ' N W d' ?E%' GF@C@' F @B@ ' = J k ?'
F@' ? >F ' A' CAI' %' GFA' D@C @ B ?>' ' AD@?@E' F ' EAAC%' @E' %'
=?E' C <' A?@' A1' F@' F @B@ ' G F' =' =11%' GF@?' =?A F@C' A1' F@ J %'
F=B ?>' =' D A ' ?' F ' F=?E;' =?E' D@C @ B ?>' D@C A? ' ?' F@' @? C '
C@=E ' ' ? @CC D ' F@ J %' D ' F ' D A ' G F ?' F@' EAAC%' AB@C' F@

" B /)' ' 29 '=2 ' ' ! ' ' ' G.E' ' '
+<*/' ' +' :' 2*&/' ' 29 '=2 '' 7+=' W:b' H' '=4' YI' :' +*/' AAA' <;
+&4/(7+(:= 12 'J 14/ :' +=' +' '+11==2(# 3/P EM' :' +70' ' ' 1' HE' =' ' .G' .
&2(/' 49/' &+14 ' :' ..A' + ; 3' 1' D' "' GYH' 2=4'
W1b' G' +*/' EAI ' HAA' ' 3 & :' +' :' .ME' I' *+1' 2 ; ' GGD' +12 ' ' 3
=//' : ; 2' :$' 1+=/' <44' GM' /*' D' :' 4 4' L 3 5' W b
+*/' AAI ' 79&(/' +' =/(J+' 4' 792' <' P W]b' ! 332 '$' 1+=/' 2=4' .MD' .ME
+419/ :' 49/' =4+ (&224' :22(' +' :' /' 4 7 49' W w b' H' '=4' YI' :' +/' YAA' <;
+' 9+419/4' 42' 0 ** 9 =' ; +=4/(' 7+=' 9/*:' EM' ,
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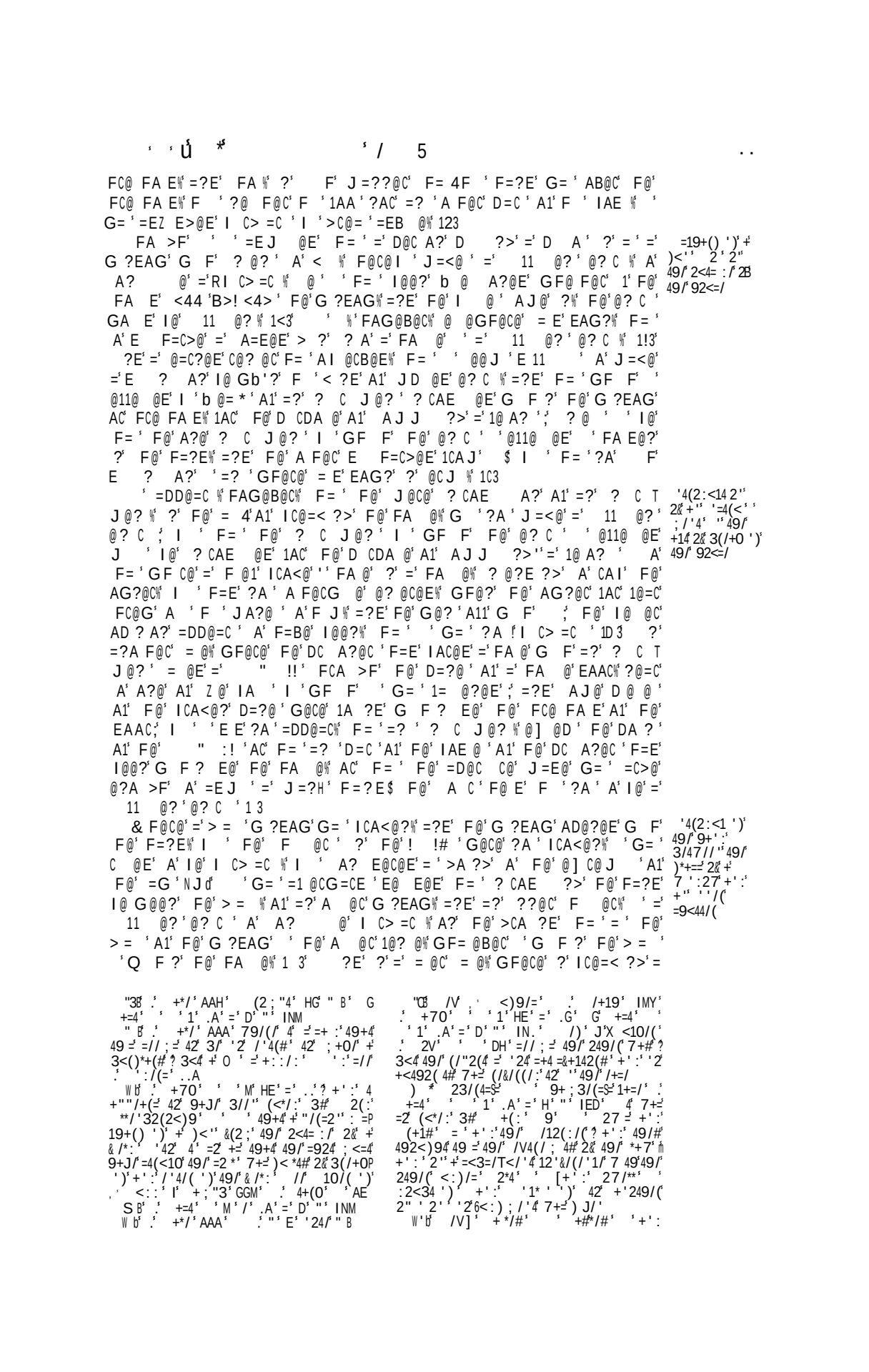

G ?EAG' ?' ACE@C' A' @@E' AJ@ F ?>' ?' F@' FA @%' F@' DC A?@CH' 1 ?>@C' G@?' G F ?' F@' FA @%' F@'Z E>@ ' F@ E' F=' F@C@' G=' =' 11 @?' @? C ' A' A? @' I C> =C ' F@' DC A?@C' G=' ? =? ' =DDC@F@?E@E' I@1AC@' F@' A E' D ' F ' F=?E' A' @=' =? F ?>%' NAd

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' > = ' = F' G ?EAG' G=' 11 1' A @E' EAG?%' I ' G=' FCAG?' D' I ' F@' DC A?@C ;' F@' ? E@' F @C ' G@C@' 1= @?@E%' =?E' F@C@' G=' =' D= @' A1' = I A ' FC@@' ? F@ ' I@ G@@?' F@' = F' =?E' F@' F @C %' GE F' G@C@' = I A ' =?' ? F' F <;' =1 @C' F@' = F' G=' FCAG?' D%' =' CAG I=C' F=E' I@@?' ? CAE @E' A' 1AC @' F@' F @C %' =?E' F=E' I@@?' ?A ' A? ' G F ?' F@' = F%' I ' F=E' C@= F@E' A' w@' ? E@' A1' F@' F @C %' = ' F@' J =C<' A1' ' G ' '1A ?E' A?' F@' ?' ZE@' A1' F@' F @C ;' =?E' DA?' =' = @' C@ @CB@E%' F@' Z E>@ ' F@ E' F=< F Q' G=' ?A ' =?' @? C %' = ' ' E E' ?A ' =DD@=C' F=' =? ' D=C ' A1' @' DC A?@CH' F=?E' G=' G F ?' F@' G ?EAG%' 1E3

=4 '14 2'' 3/47//'' +'' /'4(# 7 49' 49/' 9+' :' +' :' 7 49' +'' 'P =4(< ; /'4

?' =?' ?E J@?' 1AC' I C> =C ' ' G=' DCAB@E' F=' F@' DC A?@C' F=E' 1 @E' D' F@' = F' A1' =' G ?EAG%' =?E%' F=' 1AC' F@' D CDA @' A1' EA ?>' A%' F ' F=?E' G=' G F ?' F@' CAA J' A1' F@' FA @;' F@C@' G=' ?A' 1 C F@C' DCAA1' A1' @? C ;' ' G=' A? @?E@E' F=' 1' F@' F=?E' G=' F@C@' 1AC' F@' J @C@' D CDA @' A1' AD@? ?>' F@' = F%' F@C@' G=' ?A' 11 '' @? ' @? C ' = 1A CE%' $ 7 & @' F=B@' I@@?' AA< ?>' ? A' F@' = FAT C @ %' =?E' ' @@ J ' 11 @?' 1' F@' F=?E%' AC' =? ' D=C ' A1' Fx' D@C A?%' ' G F ?' F@' FA @' 1AC' =? ' D CDA @ H = @ A?%' ' $ 7 & F@C@' =?' ? C J @?' ' @E%' F@' =G' =DD@=C ' A' I@' E 11@C@?;' F@C@' F@' > C J @?' J ' I@' G F ?' F@' DC@ J @ %' ?A ' A? ' 1AC' F@' D CDA @' A1' J =< ?>' =?' @? C %' I ' = A' 1AC' F@' D CDA @' A1' @11@ ?>' F@' A? @ J D = @E' 1@ A? ;' = ' GF@C@' =' FAA<' ' D CAE @E' 1AC' F@' D CT DA @' A1' =< ?>' =G= ' >AAE %' AC' =' D A ' D ' ?' 1AC' F ' ' D CDA @' A1' < ?>' F@' ? J = @ ' A1' F@' FA @';' I ' 1' F@' ? C J @?' ' J @C@ ' @E' 1AC' F@' D CDA @' A1' J =< ?>' =?' @? C ;' F@?' F@' DCAA1' A1' F@' @? C ' 1= ' & @' F ?<' F@C@' ' 11 @?' @B E@? @' F@C@ H ROB

'=<&& 1 /'4 /J :/'1/' 2& +'' /'4(#

?' =?' ?E J@?' 1AC' I C> =C ' ' =DD@=C@E' F=' =' AE>@C' ?' F@' FA @' G=' E CI@E' I ' F@' A ?E' A1' ICA<@?' > = %' =?E' AA< ?>' A ' A1' F@C' G ?EAG' F@' =G' F@' @> ' A1' =' J =?' E=?> ?>' ?' F@' = C%' =?E' F=?> ?>' = ' 1' A ' A1' F@' FAD' G ?EAG' I@ AGZ' GF F' F@' A E' ?A' b @' @@;' A?' I@ ?>' = @E' A%' F@' J =?' DC=?>' A' F@' >CA ?E' =?E' C=?' =G= ' & F@?' F@' FAD' G ?EAG' G=' @] = J ?@E%' GJ' D=?@ ' A1' > = ' G@C@' 1A ?E' ICA<@?%' F@' D @ @ ' ?>' ? E@' F@' 1C= J @%' =?E' =' b =? ' A1' @=E' GAC<' G=' ' =G= %' = ?>' =?' AD@? ?>' FCA >F' GF F' =' J =?H ' F@=E' =?E' FA E@C ' J >F ' @= ' I@' FC ' " A F ?>' F=E' I@@?' =<@?' A ' A1' F@' FAD%' =?E' F@C@' G=' ?A' A F@C' @B E@? @' A' FAG' F=' =? ' D=C ' A1' F@' J =?H ' D@C A?' F=E' I@@?' G F ?' F@' FAD' G ?EAG ' A J =?%' %' E C@ @E' =?' = b =' A?' F@' >CA ?E' F=' F@C@' G=' ?A ' 11 @?' @B E@? @' A1' =?' @? C %' N HI

F@' DC A?@C ' G@C@' A?B @E' I@1AC@' @ %' %' A?' =?' ?E J@?' F=C> ?>' F@ J ' G F' I C> =C A ' IC@=< ?>' =?E' @? @C ?>' @' EG@ T ?>' FA @' A1' F@' DCA @ AC%' G F' ? @? ' A' @= %' =?E' @= ?>' =' 1 F' A1' I= A?' F@' DC A?@C' AA @ ' AE>@E' ?' F@' DCA @ ACH' FA @';' F@' G ?EAG F @C' G=' ?' F@' ? >F ' J @' AD@?@E' 1CA J ' F@

' ' ' HI . ' /V' &' /(0/=' .' ' ' ' HMM' '

' /V' +J =' ' ' ' INN

' /V' 44<=4 ' ' ' ' ' ' ' ' .EH

' /)' S (/' ' I' 2V' ' HNE

' /)' /+*' H' 2V' ' ' DM' 9/' "(=2 '/(7+=' 49/ '' ' : 14/ :' &2(+4P 4/ ; "4 ')' 42' 12 ; ; 4' 49/' 3<()*+(#' +' :' 2*4 ; +' ' ' */&4' 4' 42' 49/' 6<(# 79/49/(9/' 9+ :' +14<+**#' /'4/(/ :' 49/' 92<=/' +' :' 49/#&2<' :' 49+4' 9/' 9+ : ' ,

' ? E@' A1' F@' FA @%' F@' = @ J @? ' A1' F@' [G ?EAG' G= ' =<@?' A ' =?E' F@' I= A?' G= ' J A ' DCA I=I ' D ' FCA >F' F@' G ?EAG' A' CC%' I ' GFA J' ' G= ' =CC @E' =G= ' 1CA J' F@' DCA @ ACH' DC@ J @ ' A' CCH' FA @ ' ' E E' ?A ' =DD@=C' F= ' AA @ ' G@? ' A ' A1' F@' FA @%' AC' F= ' CC' @B@C' @? @C@E' FL' FA @ ' ' ACE F D' ? ?@E%' = ' F@' C = %' Z' F ?<' F= ' F@' F=C>@' A1' I C> =C ' ?' F@' ?E J @? ' G= ' ?A DDAC @E' I ' F@' @B E@? @;' I ' A E' F@' Z C %' F= ' 1' F@ ' I@ @B@E' F@' 1= %' F@' =EB @E' F@ J ' A' A?B %' =?E' F= ' F@' GA E' =B@' F@' DA ? ' 1AC' F@' G@ B@' Z E > @ ;' =1 @CG=CE %' A?' A?1@CC ?>' G F' F@' Z E>@ ' I1' F@' A C ' A1' 6 ?>H' @? F%' F@' FA >F ' F= ' F@C@' G= ' ?A' @B E@? @' A1' @? @C ?>' F@' FA @%' =?E' F@' F@C@1AC@' E E' ?A ' DC@ @? ' F@' = @' AH1 @' G@ B@' Z E>@ % E ' C@ A J J @?E@E' =' D=CEA?' A?' A?E A?4' A1' 1C=? DAC = A?' 1AC' @B@?' @=C %' = ' F@' DC A?@C ' G@C@' DCAD@C 4 A?B @E' A1' =' =C @? %' N d

? =?' ?E J @? ' 1AC' I C> =C ' ' =DD@=C@E' F= ' F@' A1 ' A1' F@' FA @' F=E' GA' EAAC %' A?@' ?' F@' CAA1%' F@' A F@C' A J J ? = ?>' G F' F@' CAA J' I@ AG' $ a@C@' G= ' ?A' @B E@? @' A' FAG' F= ' F@' EAAC' ?' F@' CAA1' F=E' I@@?' ICA<@?' AD@?%' I ' F@' A F@C' F=E' I@@?' GC@? F@E' A11' ' F ?>@ ;' F@C@' G= ' ?A' DCAA1%' FAG@B@C%' A1' =? ' @? C ' F=B ?>' @@?' J=E@' FCA >F' F= ' EAAC' ;' =?E' ' G= ' F@ E' F= ' F@' F=C>@' A1' I C> =C 4G= ' ?A ' DCAB@E;' 1AC' F@' @? C ' J ' I@' A? @b @? ' DA?' F@' IC@=< ?>%' N d [

9/(/' 49[' 3(/+0 ')' =' 2& +'' ' ' /(:22(49/' / '4(# ; <=4' 3/' 49(2<)9' 4

F@' @? C '4?@@E' ?A ' I@' J =E@' A?' F@' =J @' ? >F ' = ' F@' IC@=< ?>%' FA >F' IA F' J ' I@' EA?@' ?' F@' ? >F ' J @' $ 7>3' I ' F ' DA D ' G ' I@' JAC@' DCAD@C ' J @? A?@E' ?' F@' C@= ?>' A1' F@' J @' = ' GF F' F@' A11@? @' J = ' I@' A J J @E

'4(#' // :' '24' 3/' ; +: /' 49/' =+ ; /' ')94' +=' 49/' 3(/+0 ')

F@' EA C ?@' GF FH F= ' I@@?' = E' EAG?%' C@ D@ ?>' DC ? D= ' ?' F@' @ A?E' E1@>C@@%' =?E' = E@C ' =?E' =I@ AC %' ?' =' 1AC J @C' D=C ' A1' F ' GAC<%' G ' =DD ' A' F@' = @' A1' I C> =C ;' =?E' J =<@' F@' IC@=< ?>' =?E' @? @C ?>' I ' A?@' F@' = ' A1' = ' F@' D=C ' @?>=>@E' ?' F@' C=? T = A?%' =?E' @>= ' DC@ @? ' GF @' F@' 1= ' ' A J J @E%' 1'3' A' F= ' 1' %' %' =?E' %' >A' DA?' =' A J J A?' D CDA @' =?E' E@ >?' A' A J J ' =' I C> =C ' ?' F@' FA @' A1' # %' =?E' ' A? ' = = ' IC@=<' =?E' @? @C' F@' FA @%' ' =?E' ?@=C' F@' EAAC' I ' EA' ?A ' @? @C%' =?E' ' =?E' = ' F@' =?@H ' @?E%' AC F=CE' >= @%' , %' A' G= F%' F ' G ' I@' I C> =C ' ?' F@ J' = ;' =?E' F@ ' =C@' = ' ?' =G' DC ? D= %' 153

'4(#+' :' =4/+* ')' /&&/14/ :' 3# ; /+' =' 2& +'' '&+' 4

" @ F@C' G ' F@' A11@? @' I@' F@' @ ' F@' = ' A1' F@' D=C ' 1CA J' F ' F=B ?>' @11@ @E' F@' @? C ' =?E' F@' @= ?>' I ' J @=? ' A1' =?' ?1=? ' ?E@C' F@' =>@' A1' E C@ A?' F %' 1' %' =' J =?' A1' 1 ' =>@%' =<@' =' F E' A1' @B@?' AC' @ >F ' @=C ' A E%' G@ ' ? C @E' I ' F J' ?' FQ' B =?A ' =C %' = ' A J @' F' F@C@' = C@ ;' =?E' F@' F E' >A@ ' ?' = ' F@' G ?EAG%' =<@ ' >AAE ' A %' =?E' E@ B@C ' F@ J' A' %' GFA' =CC @ ' F@ J ' =G= %' F ' ' C> =C ' ?' %' FA >F' F@' F E' GFA' J =E@' F@' @? C %' I@' ?A ' > %' I ' C@= A?' A1' F ' ?1=? %' N d

L ' : ')')< *4# 2& +44/ ' ; '4

' D E' I@' AI @CB@E%' F= ' 1' F@' @? C ' I@' ?A ' DCAB@ y%' F@' DC A?@C' J = ' I@' 1A ?E' > ' A1' =?' = @ J D ' A' A J J ' I C>T =C %' 7'3

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'& (((&

F< ' 6 !4 ' = 4>

&49/ ; + 'P = 2 ' 92<=/

F@ ' I C@=< ?>' =?E' @? @C ?>% GF F' F=B@' I@@?4 F ' E@ C I@E% J ' =<@' D = @' ?' =' & 6 !4 ' AC' #5 ! 2 <4> G GF F' = @C' @C J ' ' ?AG' >@?@C= ' =EAD @E' ?' ?E J @? '41AC' I C> =C ' ?E' ?' C@= ?>' A1' F' J =? A?% AC' EG@ ?> FA @% G H I@' DCAD@C' A' ?b C@% 1 C % = ' A' GF= ' F= ' F@' A' A? E@C@E; @ A?E % FAG' 1=C ' J ' I@' ?F = I @E; =?E% F CE % = ' A' F@' D@C A?' A' I@' E@@ J@E' F@' AG?@C' A1' ; 1AC' F@' AG?@C F D' FA E' I@' ACC@ ' = @E' ?' F@' ?E J @?

9+4 =9+** 9/ 12 '= : /(/ :' +' ' - = 2 ' 92<=/

B@C ' FA @' 1AC' F@' EG@ ?>' =?E' F=I = A?' A1' J =?' ' =<@?' A' I@' =' J =? A? FA @' ?' GF F' I C> =C ' J = ' I@' AJ J @E ' NVd ?E' =' DAC A?' A? ' A1' =' I E ?>' J = ' AJ @' ?E@C' F ' E@ C D A 1' F ' GF@C@% DA?' =?' ?E J @? ' 1AC' I C> =C % ' =DD@=C@E' F= ' F@' DCA @ AC' C@? @E' A? ' @C = ?' CAA J ' A1' =' FA @% ?= J @ % =' FAD' =?E' D=C A C% ?' GF F' F@' I C> =C ' G= ' AJ J @E% I ' F= ' F@' AG?@C' E E' ?A ' ?F=I ' =? ' D=C ' A1' F@' FA @% =?E' A? ' A D @E' FI' @ =C% ' G= ' FA E@?' F= ' F@' FAD' =?E' D=C A C' G@C@' A' I@' A?T E@C@E' = ' F@' J =? A? FA @' A1' F@' DCA @ AC% N=d ?E' @ ' A1' F= J I@C ' ?' =' A @>@% AC' =?' ??' A1' A C % =1@' A' = ' D CDA @ ' A?T E@C@E' = ' E ? ' EG@ ?> FA @ ; I@ ?>' A1 @?' F@ E' @C' E ? ' @ % =?E% ?' F@ C' ?= C@' =?E' J =??@C' A1' A D= A?% = ' ? A?T ?@ @E' G F' @= F' A F@C% = ' 1' F@ ' G@C@' ?E@C' @D=C= @' CAA1 % 1:3 ' A1 % = @E' AB@C' =' A= F FA @' =?E' =I @ % ?' =' D I ' J@G % =?E' A?B@C @E' ? A' AE> ?> CAA J % F= ' = A' I@@?' FA E@?' A' I@' = EG@ ?> FA @ ' F@' DCA @ AC% GFA' G= ' A= F J =?' A' =' =E % C@? @E' F@' CAA J ' = ' =' @=C ' C@? ; I ' F@' F=E' ?@B@C' D= E' =? ' C@? ; =?E' F@' CAA J ' G@C@' ?A ' C= @E' ?' F@' D=C F' IAA< ' = ' EG!@ ?>C' FA @ % I ' = ' =DD C @?=? @' A' F@' A= F FA @' =?E' =I @ $ F@' G= ' A' F@' A= F FA @' =?E' =I @ ' G= ' EAG?' =' D= =>@' A ' A1' F@' D I ' J@G % A' =' = C = @' GF F' @E' A' F@ @' CAA J % =?E' F@' @? C=? @' A' GF F' = C = @' G= ' FCA >F' =' EAAC% GF F' G= ' ?@B@C' 1= @?@E% I ' F@C@' G!= ' =' EAAC' = ' F@' AD' A1' F@' = C = @' A' F@' CAA J % GF F' G= % A <@E' = ' ? >F % =?E' G= ' ICA<@?' I ' F@' DC A 'C' ' G= ' A? @?E@E% A?' I@F= 1' A1' F@' DC A?@C% F= ' F@ @' CAA J % GF F' DCAI=I 'G@C@' AC > ?= ' ? @?E@E' = ' J @1 ' F= A1 % E E' ?A % ?' A? @ J D = A?' A1' =G% 1AC J' F' J =? A? ' AC' EG@ ?> FA @ % = ' A' I@ AJ@' F@' IZ@ ' A1' I C> =C ';' I ' F@' AIZ@ A?' G' ' AB@CT C @E' I ' F@' A C % GFA' FA >F ' F= ' F@' C J =? @' A1' F@ @' CAA J ' I@ ?>' = @E' AB@C' F@' A= F FA @' =?E' =I @ % GA E' ?A' = @C' F@' ?= C@' A1' F@' = @; =?E' F= ' F@ ' G@C@% A' = ' ? @? ' =?E

"V8 H '=4' ()
" 8 2)/(=$ 1+=/' ' /+ :b' EN' IGE' G +=4' ' ' 1 - A' =' .N' "' AMY' 9/' "2 '4=' (/="/14 ')' : &*/(/'4 ; +'= 2'=' '' 49/' =+ ; /' 92<=/' 7 ** 3/' 12'= :/(/ :' "(/=/ '4*#' '' 4(/+4 ')' 2&49/' N0 < '

49/' ; +'= 2' 92'=/
"(8 .' +*/' AGG' AGY' :' 70' ' 1' HE' =' .E' J+'=$ 1+=/' (2' &+(')GA')' *+1' 2 ; ' G.A' G +=4' ' 1' .A' =' .D' "' AMY

D CDA @ % F@' F=I = A?' =?E' EAJ @' A1'L F@' DCA @ AC' =?E' F ' 1=J % N d' C> =C % FAG@B@C% =??A ' I@' AJJ @E' I ' IC@=< ?>' ? A' =? ' ? A @E'>CA ?E% AC' =? ' IAA F% AC' @? % @C@ @E' ?' =' J =C<@ % AC' 1= C% FA >F' F@' AG?@C' J = ' AE>@' F@C@ ?' ; 1AC' F@' =G' C@>=CE ' F ' F >F % ?A F ?>' I ' D@C J =?@? ' @E 1 @ ;' =?E' F@' AE> ?>' A1' F@' AG?@C' ?' A' 1C= ' =' @?@ J @? ' ?A' JAC@' J =<@ ' ' I C> =C % A' IC@=<' ' AD@?4' F=?' ' GA E' I@' A' ? AB@C' =' @E' G=>>A?' ?' F@' =J@' C J =? @ % R B

& F@C@% FAG@B@C' =' D@C J =?@? ' I E ?>' A1' J E' =?E' IC <' A?' F@' #AG?' =' & @ F % GF F' G=' A? ' @E' = ' =' IAA F% 1AC' F@' D CDA @ ' A1' F@' 1= C% 1AC' =' 1@G' E= ' ?' F@' @=C% F=E' GAAE@?' EAAC % =?E' G ?T EAG ' IA @E' ? E@ ' E' F@' DCA @ AC ' C@? @E' ' 1AC' F@' G@@<' A1' F@' 1= C% =?E' F@' 1?E' F ' ' G 1@' @D ' F@C@' @B@C ' ? >F ' A1' F@' 1= C% E C ?>' A?@' ? >F ' A1C GF F' F@' A 1@? @' G=' AJJ @E;' ' G=' F@ E' F=' F ' G=' =' 11 @?' EG@ ?> FA @' 1AC' F@' D CDA @' A1' I C> =C % N@d

F@' J=? A?' AC' EG@ ?> FA @% ?' GF Z' I C> =C ' J >F ' I@' AJJ @E% G=' F@ E' 1AC J@C ' A' ? E@' F@' A FA @ % F' =' G=C@FA @ % I=C? % =I @ % AG!FA @ % AC' E= C FA @ % FA >F' ?A ' m?E@C' F@' =J@' CAA1% AC' ZA ? ?>' A? > A ' A' F@' EG@ ?> FA @% DCAB E@ ' F@ ' G@C@' E6" ' F@C@A1 ' N Md' ?E' =? ' A FA @' G F ?' F@' >" ! 62 ' AC' =J@' A1 JA?' 1@? @% = ' F@' J=? A?' @ 1% G=' A? E@C@E' A4I@' D=C @ ' A1' F@' J=? A?% DA?' F@' >CA ?E' F=' F@' =D =' FA @' DCA @ @E' =?E' DC B @>@E' = ' ' IC=? F@ ' =?E' =DD CT @?=? % 1'G F ?' F@' C =>@' AC' FAJ@ = ' 723' ' F@' -:' ,' '8' 3 @ ' ' % ' 8 % @?= % F=' 7?A' I E ?>% = FA >F' G F ?' F@' =J@' C =>@' G F' 1C@ EG@ ?> FA @% =?E' A D @E' F@C@G F% F=' I@' E@??@E' A' I@' D=C ' A1' F' EG@ ?> FA @' 1AC' =?' A1' F@' D CDA @ ' A1' F ' % ? @ ' F@C@' F=' I@' =' AJJ ? = A?' I@T G@@?' F' I E ?>' =?E' EG@ ?> FA @% @ F@C' J J@E = @% AC' I ' J@=? ' A1' =' AB@C@E' =?E' @? A @E' D= =>@' @=E ?>' 1CAJ' F@' A?@' A' F@' A F@C H H*3 ' F@' IC@=< ?>' =?E' @? @C ?>' =? ' I E ?>' G F ?' F@' C =>@' A1' =' EG@ ?> FA @% =?E' @= ?>' F@C@ ?% ' IZ@ @E' A' =' F >F@C' D ? FJ@? ' F=?' JD @' 1@ A? ' I ' =?A F@C' @ A?' A1' F@' =J@' = @% GF F' G ' I@' JAC@' Zd=C =C ' J@? A?@E' ?' =' I @b @?' F=D @C % N d

FA >F' =' FAD' J = ' I@% =?E' = ' % =' D=C @ ' A1' F@' EG@ ?> ' FA @' A' GF F' ' ' = = F@E;' @ ' 1' F@' AG?@C' A1' F@' EG@ ?> ' FA @' @ ' F@' FAD' A' =' @?=? ' GFA' A D @ ' ' I ' J @=? ' A1' =' E 11@C@? ! @? C=? @' 1CAJ' F= ' I@ A?> ?>' A' F@' EG@ ?> FA @% =?E' =CC @ ' A?' F ' I ?@ ' ?' % I ' ?@B@C' @@D ' F@C@% ' ' ?A ' =' D = @' ?' GF F' I C> =C ' =?' I@' AJJ @E% 1' F@C@' I@' ?A' ? @C?= ' AJT J ? = A?' G F' F@ ' A F@C' D=C ' A1' F@' FA @' ;' 1AC' ' ' ?A ' D=C @ ' A1' F@' EG@ ?> FA @' A1' F@' AG?@C% GFA' A D @ ' F@' A F@C' D=C % I@ ?>' b' @B@C@E' I ' @= @;' ?AC' ' ' F@' EG@ ?> FA @' A1' F@

R B' <(' /(S=' 1+=/' ' ! 2<*:' +' :' <*' */(=' ? +' :' /((#' ' :' /+19' HMA' G' +=4' ' ' 1' .A' =' N' "' ING' +' :' 49/' <:)/=' +&4/(7+(:=' 7/(/' 2& 2" ' 2'' 49+4' 49 =' 7+=' +' :7/** ') 92<=/

R'C% :' +*/' AAD' :' +70' ' ' 1 .E' =' HA' I' *+1' 2;' GGY ' /V ' ; 49' ' ' ' 29' GAY' +(0' ' ' ' +' :' 44*1:+*1' W wb' H' '=4' Y ' :' +*/' AAE' <;

EG' :' +70' ' ' 1' HE' =' G.' I' *+1 2;' GGA B' :' +*/' AAE' N' :' +70' ' ' 1 HE' =' GA' I' *+1' 2;' GGA' G' +=4 ' ' 1' .A' =' .M' "' INH " B' 9 =' 1*+<=/' =' 4+0/'' &(2;' 49/' D' E' ! /2' I' 1' GN' =' .H' +' :6' ! /2' I' 1' AA' =' .H' W.b' /' ; #' '24/' 42' 49/' (; ' 14=' "' .II' G' :' :' ' ! WD0' :' 19+"' A

2249=' 4/' 4=' 16

24' 3<*: ')=' 7 49 '' 49/' 1<(4 *+)/' <'*/=' 49/(-3/' +' 12; ; <' 1+P 4 2'

' "+(4' 2&' +' 92<=/' ; +# 3/' =2' =/J/(/:' &(2:' 49/' (/=4 +=' '2' *2')/(' 42' 3/' +' "*+1/' '' 79 19' 3<()*+(# 1+'' 3/' 12; P ; 44/:

@ @@%' GF@?' ?@ F@C' Fk'?AC' =? ' A1' F ' 1=J ' @B@C' @@D' F@C@ 'NU;d
' 1' F@C@' F@' =?' ? @C?= ' AJJ ? = A?%' I C> =C ' ' @@J ' J= '
I@' AJJ @E ' F %' GF@C@' =' J =?' @ 'D=C 'A1' F 'FA @%' ? E ?>'
=' FAD%' A' F ' A?%' =?E' F@C@' G= ' =' E ? '@? C=? @' ? A' F@' D=C '
A' @ %' I ' =' D= =>@' 1CAJ' F@RA?H ' D=C ' @E' A' F@' 1= F@CH ' @ =C %'
=?E' F@ 'G@C@' AD@?' A' F@' 1= F@CH 'D=C 'A1' F@' FA @'' =?E' F@' A '
?@B@C' @D ' ?' F@' D=C ' A' @ ' A' F J %' ' G= ' F@ E%' DA?' =' = @'
C@ @CB@E%' =1 @C' =' A?B A?' 1AC' I C> =C ' ?' F@' FAD%' = E' A' I@' F@'
EG@ ?> FA @' A1' F@' 1= F@C%' F= ' F@' A?B A?' G!= ' C >F %' DA?'
F@' >CA ?E' F= ' F@' D=C 'A1' F@' FA @' @ ' A' F@ 'A?' A? ? @E' A'
I@' D=C ' A1' F@' EG!@ ?> FA @' A1' F@' 1= F@C%' I ' C@= A?' A1' F@'
? @C?= ' AJJ ? = A? ' NM d & F@C@' =' D= D@1H F C@E' =' FA @' =?E'
>=CE@?' 1AC' =' @=C%' =?E' F@ E' F@' =J@' 1CAJ' 9 - ;A' 9- %' F '
E C ?>' F@' = '1A C' @=C ' @ ' A' =' AE>@C' A?@' A1' F @'CAAJ 'A?' F@'
>CA ?E' 1 AAC%' GF F' AJJ ? = @E' G F' F@' =CE' =DD C @?=? ' A'
F@' FA @' I ' =?' A @C' EAAC%' =?E' G F' F@' =EZA ? ?>' CAAJ 'A1' F@'
FA @' I ' =?' ??@C' EAAC%' A1' GF F' EAAC ' F@' AE>@C ' <@D ' F@' <@ %'
=?E' F@' A D @E' ?A F ?>' I ' F@' CAAJ ;' ACE' @? @CE@?%' ' %'
= E%' 7 ' ' = E' F= ' F@' AE>@C' F@ E' =' D=C ' E ? '1CAJ' F@' C@ %'
A' F= ' =' I C> =C ' AJJ @E' ?' F= ' D=C ' J >F %' ?' =?' ?E J@? 1'
I@' = E' A' F=B@' I@@?' ?' F@' EG@ ?> FA @' A1' F@' AE>@C';4 ' F ?<%'
FAG@B@C%' F= ' F= ' DCADA A?' ' ?A1' @ =I F@E' I ' F@' 1= '
= @E ' ' ' = E%' F= 'D ?>' F@' <@ 'A1' F@' ??@C!EAAC' ? A' F@'
FZ ?E 'A1' F@' AE>@C' G= ' F@' =J@' F ?>' = ' 1' F@C@' G= ' =' IC <' G= '
I@ G@@?' F ' =?E' F@' =EZA ? ?>' CAAJ ' 1%' ?E@@E%' ' F=E' I@@?'
= @E' F= ' F@' <@ ' G= ' E@ B@C@E' A' F@' AE>@C' 1AC' F@' @]DC@ '
D CDA @' A1' DC@B@? ?>' F@' AJJ ? = A?' I@ G@@?' F@' E 11@C@?'
=D=C J@? %' F@C@' GA E' I@' JAC@' G@ >F ' ?' F@' =C> F?@? ' '
F@' <@ ' J = ' F=B@' I@@?' E@ B@C@E' A' F J' 1AC' F@' D CDA @' A1'
@?=I ?>' F ZD' A' @? @C' @ F@C' G= ';' =?E' 1' F= ' G= ' F@' AIZ@ %'
F@?' F@' F=E' ?A '=? ' E ? 'EG@ ?> FA @' 'C= F@C' ?1@C' 1CAJ'
F@' 1= ' = @E%' F= ' F= ' G= ' F@' AIZ@ ' 1AC' GF F' F@' <@ 'G= '
E@ B@C@E';' =?E' 1' A%' F@?' F@' D= D@C' F@ E' F@' GFA @' FA @%' =?E'
' ' A' I@' A? E@C@E' = 'A?@' @? C@' @?@J @? ;' =?E' ?' F= ' = @' ='
I C> =C ' AJJ @E' ?' F@%' D=C ' A D @E' I ' F@' AE>@C' J '
F=B@' I@@?' = E' A' F=B@' I@@?' ?' F@' EG@ ?> FA @' A1' F@'
D= D@C H N_d

1' F@' @ @@%' AC' F ' @CB=? %' FA E' = %' AC' A1 @?%' AE>@' = '
? >F ' ?' =' FAD' AC' A F@C' DC@J @ ' @B@C@E' 1CAJ' F@' FA @%' '
GA E' F@?' I@' F@' J=? A?' AC' EG@ ?> FA @' A1' F' @ @@%' ?'
GF F' I C> =C ' J >F ' I@' AJJ @E%' NJ d' %

9+ ;3/(=' 1/**+(=' 1 ' */4 42' +4 4-1'+'4 7 49' 'Z' 'P 4/('+# 12 ; ; <P ' 1+4 2'' 7 49' 49/' (/=4 2& 49/' 92<=/

' = @' G= ' D ' DA?' F@' A E' =G' A1' I C> =C %' GF@ F@C%' 1' F@' AG?@C' =?E' A D @C' A1' =' EG@ ?> FA @' FA11 E' @ ' =' D=C ' A1' %'
?=J@ %' =' F=J I@C' =?E' =' @ =C%' A' =' @?=? %' F@' A? 'D= =>@' A'
F@' @ =C' I@ ?>' A 'A1' F@' C@@ %' =?E' F@' @ =C' FA E' I>' ICA<@?'
AD@?' ?' F@' ? >F %' ' GA E' I@' I C> =C ;' =?E' ' B=' DDA @E'
F= ' 'GJ E' ?A %' A?' F@' >CA ?E' F= ' F@' @ =C' J ' I@' A?T
E@C@E' = ' @B@C@E' I ' F@' @= @%' =?E' F=E' ?A' AJJ ? = A?' G F'
F@' C@ ' A1' F@' FA @%' 1'!3' DA?' F %' FAG@B@C%' 'G= ' AI @CB@E

SB' C +*/' AAD' AAE' /*' EH' EI' I' 'ADE' +' :'=/' /V' &' ! (/+4' 2*42 ' 'E ' *+1' 2 ; ' 66GA' GGY' G' +=4' ' ' 1 'M ' D. ' /V' 419/+4' N ' ' '.DY' .A' =' GM' "' bD /V' ' +11*/=& /*: ' G' ' ' : ' EDM
"CHB /V' /&42 ' +#*/#' ' " B' C +*/' AAE +' :' ' ' 'GMG " B' X ' EH' EI
"CB /V' 2(49' 2** ')9+ ; ' .' 3 '

F= ' F@' @ =C' GA E' I@' ?A' J AC@' @B@C@ ' 1CAJ' F@' FA @' I ' F@' @= @' F=?' F@' F=J I@C%' ?' GF F'=' I C> =C ' J >F ' I@' AJ J @E%' =?E' = E' A' IA' ?' F@' J =? A?' A1' F@' AG?@C' =?E' A D @C' A1' F@' EG@ ?> FA @%' F@C@' I@ ?>' I ' A?@' AJ JA?' @? C=? @' A' F J ' =?E' F@' AE>@C ' ' ' G= ' =E J @E ' ' F= ' 1' F@' @ =C' = A?@' G@C@' @ %' @=C ' ?A' I C> =C ' A E' IA' AJ J @E' ?' ' NAd' ?E' F ' E ? A?' @C? ' 1 ' A' F=B@' I@@?' =EAD @E' ?' =' = @' GF@C@' F@' DC A?@C ' G@C@' A?B @E' A1' =' I C> =C ' ?' F@' YFA @' A1' ' J F J F' G= ' F@' AG?@C' A1' =' FA @%' ?' GF F' F@' C@ E@E%' =?E' A' GF F'FA @' F@C@' G= ' =' FAD' =EZA ? ?>%' I ' A @' A' F@' FA @;' I ' F@C@' G= ' ?A' ? @C ' ' AJ J ? = A? I@ G@@?' F@' FA @' =?E' F@' FAD%' =?E' ?Z' D@CgL?' @D ' ?' F@' FAD%' =?E' F@' A? ' EAAC' A' F@' FAD' G= ' ?' F@' A C =CE' I@1AC@' F@' FA @' =?E' F@' FAD%' GF F' =CE' G= ' ? A @E' I ' =' IC <' G= %' FC@@' 1@@ ' F >F%' ? E ?>' IA F' F@' FA @' =?E' FAD ' J F' @ ' F@' FAD%' A>@ F@C' G F' AJ @' =D=C J @? ' ?' F@' FA @' A' %' 1CAJ' @=C' A' @=C%' = ' =' C@? F@C@' G= ' A? ' A?@' AJ JA?' EAAC' A' F@' FA @%' GF F' AJ J ? T = @E' = ' G@ ' A' J FH ' = ' A' H ' =D=C J @? ' ' >= @%' AC' G <@ %' 1= @?@E' I ' =' = F' ?' F@' G= ' A1' F@' A =CE%' ?@] ' @' CA=E%' @CB@E' = ' =' AJ J ? = A?' IA F' A' F@' FA @' =?E' FAD F@' IE !> =C ' G= ' AJ J @E' ?' F@' FAD ' ?E' DA?' AIZ@ A?' F= ' F= ' A E' ?A ' I@' = E' A' I@' F@' EG@ ?> FA @' A1' J F%' F@' DA ? ' G= ' C@1@CC@E' A' F@' Z E>@ %' GFA' G@C@' = ' A1' AD ? A?' F= ' F@' ?E J @? ' G= ' G@ ' = E%' ?!E@ C I ?>' ' A' I@' F@' EG@ ?> ' FA @' A1' J F%' GFA' ?F=I @E' ?' A?@' D=C %' ' I@ ?>' G F ?' F@' =J @' I E ?>%' =?E' DE@C' F@' =J @' CAA1;' =?E' F@C@' I@ ?>' I ' A?@' A @C' EAAC%' D@ = ' = ' ' G= ' G F ?' A?@' C =>@' AC' 1@? @' ;' =?E' F= ' F@' FAD' I@ ?>' @ ' G F' =' D=C ' A1' F@' FA @' ?F=I @E' I ' % ' A? A@E' A' I@' D=C ' A1' F@' EG@ ?> FA @' A1' J F%' = FA >F' F@C@' G= ' ?A' ? @C?= ' AJ J ? = A?' I@ G@@?' F@ J ' ' G= ' =E J @E%' F= ' 1' F@' FAD' F=E' I@@?' @ ' I ' @ 1 ' ' ?A ' EG@ ?>' F@C@ ?%' I C> =C ' A E' ?A ' F=B@' I@@?' AJ J @E' ?' ;' 1AC' F@?' ' GA E' F=B@' I@@?' @B@C@E' 1CAJ' F@' FA @%' NDd ' G= ' AI @CB@E' ?' =' 1AC J @C' @E A?%' F= ' ' FA E' @@ J' F= ' ?A' ' CAAJ' ?' =' I C> =C ' A E' ?AG' I@' AJ J @EL' ?' F' @ =C' = ' F= ' = IAB@' 92<=/' +' :' 22' J @? A?@E%' RCB GF@ F@C' ' G@C@' @ ' = A?@' AC' A>@ F@C' G F' F@' F= J I@C%' = ' F@' = @' ' C@b C@ ' F= ' F@C@' FA E' I@' =' 4& ' A1 F@F ' @%' &> ! 6 !4 ' I@ G@@?' =? ' I E ?>' ICA<@?' ? A' =?E' F@' EG@ ?> ' 492<)9' 49/(/' FA @%' ?' ACE@C' A' A? @' I C> =C ' $ I ' F ' DA A?' @@ J ' A' I@' = ' B=C =? @' G F' F@' A AG ?>' = @%' J ' GF F' ' G= ' F@ E' F= ' =' @L%' % CA ?' ?' =' EG@ ?> FA @%' A D @E' F@C@G F%' =?E' ?E@C' F@' =J @' CAA1%' ' A' I@' E@@ J b '' D=C ' A1' F@' EG@ ?> FA @%' FA >F' ' F= ' =' @D=C= @' A @C' EAAC%' =?E' F@C@' ' ?A' ? @C?= ' AJ J ? = A?' G F' F@' C@ ' A1' F@' FA @' F@' DC A?@C' G= ' ?E @E' 1AC' =' I C> DC ' ?' F@' FA @' A1' G ? A?$ F@' FA @' A? @E' A1' GA' A?>' CAA J %' =?A F@C' CAA J ' @E' = ' =' @ =C' =?E' G= F FA @%' A?' F@' >CA ?E

W2b' G' / .' (' 1' .A' =' GM' "' AMD' ' :' =//' /V' &' ! 3=2 ' ' .' /+19' HAD' G' +=4' YME " B' /V' ! 3=2 ' ' G' +=4' ' [' 1' .A = GM' "' YME' .' /+19' HAD' 9/(/ 4b /' "(=2 ' /(/ ' 4/(/ :' +'*2&4' 3/ ' /+49' 79 19' 7 /(/' &2<(' +"+(4 ; / ' 4=' '9+3 4/ :' +=' +' : 7 /** ') 92<=/ ' 3<4' 79 19' : :' 1' 24' 12 ; P ; <' 1+4/' 7 4* [49/' *2&4' '' + ' #' ; + ' ' /(' 79+4/J/(' ?+' :' 2 '' 49/' = : /' 2&49/' : 7 /** ') 92<=/' 7+=' +' =92"' 79 19' 7+=' 24' <=/ :' +=' +' : 7 /** ') ' + ' :' 79 19' : :' 1' 24' 12 ; ; <' P 1+4/' 7 49' 49p' &2<(' 19+ ; 3/(=' ? 3/47 / / '' 49 =' =92"' + ' :' 49/' *2&4' 49/(/' 7+=' +' 12 ; P ; <' 1+4 2 '' 9#' +' *+ : : /(' ? 49/' : 7 /** ') ' +' :' =92"' 3249' 2"' / ' / :' ' f%49/' =+ ; /' &2*:' ? 2*(2#: ' ' 2 '' 49/' +<492(4#' 2&' /V' &' ! 3=2 ' ' 9/*:' 49/' *2&4' 42' 3/' +' : 7 /** ') ' 92<=/ ' 92 ; "=2 ' 5' 1+=/6' .' /7-' HG WIb' J " .' "' .Y

&(2 ;' 3/ ' -' "+(1/# 2& 49/' - / ') ' 92<=/# 9# 3/ ') ' 92*: / '' <' : /(' +' : =4 ' 14' 4 4*/

FA @' F ' I @ ?>' FA E@?' ?E@C' =' E ? ' @ ' ' G= ' = E% ?E@@E% F= ' 1' =' J =?' FA E' =<@' =' @= @' A1' =' EG@ ?> FA @' 1CA J' %% =?E' A1' =' I=C?' 1CA J' % F' I=C?' GA E' I@' ?A' D=C @ ' A1' F@' EG@ ?> ' FA @% =?E' ?A % F@C@1AC@% =' D = @' ?' GF F' I C> =C ' A E' I@' AJT J @E' ;' "OB' =' DA A?' GF F' GA E' @@ J' A' @=E' A' F@' ?1@C@? @% F= ' ?A' A FA @% FA E@?' ?E@C' =' E ? ' @' 1CA J' F@' EG@ ?> ' FA @% A E' I@' F@' IZ@ ' A1' I C> =CvH' ' DA?' L F % ' G= ' AI @CB@E% F= ' F@' C J =? @' A1' =?' A I C E ?>' I@ ?>' @?ZA @E' I ' F@' A D @C' ?E@C' =' E 11@C@? ' @' 1CA J' F ' 'G@ ?> FA @% @@ J @E' =' B@C ' ? = 1= AC ' C@= A?' A1' @ 1' 1AC' @] E ?>' ' 1CA J' F@' =J@' DCA @ A?% 1' ' G@CR' G F ?' F@' C =>@% AC' ?E@C' F@' =J@' CAA1% =?E' = = ' @?ZA @E' = ' D=C @ ' A1' F@' 'B@ > FA @% ?' DA ?' A1' 1= % =?E' ?E@C' F' C J =? @ ' = ' PBA '' =D=C ' 1CA J' F@' E 11@C@? @' A1' @% A? @' ' D=C @ ' A1' F@' J=? A?' ?' DA ?' A1' =G ' R5B

&' 49/' '9+3 4+ ' 1#

F@' ?@] ' b @ A?' C@ = ?>' A' F@' J=? A? FA @' % FAG' 1=C' ' J ' I@' ' C

+=/=' 79/(/' 49/' ' 9+=' ' 2' 3/)<'' 42' ' 9+3 4

' =DD@=C ' A' I@' G@ ' @ @E% F= ' ? @ ' F@' AG?@C' F= ' =<@?' DA @ A?' A1' F@' FA @' I ' ?F=I ?>' ' D@C A?= % (I ' AJ^'' A?@' A1' F ' 1=J % ' G ' ?A ' F=B@' I@ AJ@' F ' EG@ ?> FA @' ?' F@' D1AD@C' J @=? ?>' A1' F@' GACE% = ' =DD @E' A' F@' A11@? @' A1' I C> =C ' F@C@' =C@' @B@C= ' = @ ' A' F ' @1@ % GF F% 11 @? ' AB@CC @' =? ' E 11@C@? ' AD ? A? ' GF F' J = ' F=B@' I@@?' 1AC J@C ' @? 1@C = ?@E ' "VB

#2 '=$ 1+=/

' * H' J F' F=B ?>' D C F= @E' =' FA @' G F' =?' ? @? A?' A' C@ E@' ?' % F=E' JAB@E' ? A' ' AJ@' A1' F ' 1 C? C@' =?E' @11@ % A' F@' B= @' A1' =IA ' @?' DA ?E ' ;' F@' FA @' G= ' D ' ?E@C' F@' =C@' A1' =' =CD@? @C' 1AC' F@' D CDA @' A1' I@ ?>' C@D= C@E' ;' I ' * C ' J F' F=E' ?A ' F J @ 1' @? @C@E' ? A' F@' A D= A?' A1' =? ' D=C ' A1' % ?AC' E E' =? ' D=C ' A1' F ' 1=J % ?AC' =? ' D@C A?' GF= @B@C% @@D' F@C@ ?' & F @' F@' FA @' G= ' ?' F ' = A?% ' G= ' ICA<@?' AD@?' ?' F@' ? >F ' J @' ;' =?E% DA?' =' = @' C@ @CB@E% F@' Z E>@ ' G@C@' A1' AD ? A?' F= ' ' A E' ?A ' I@' A? E@C@E' = ' =' EG@ ?> FA @% I@ ?>' @? C@ ' ? ?F=I @E' ;' =?E' F= % F@C@1AC@% F@C@' A E' I@' ?A' I C> =C % N=d

+**+(:$=1 ' =/

A' GF@C@' F@' @?=? ' A1' =' FA @% GF@?' F@' 1AC J@C' @?=? ' F=E' b @E% D ' = ' F ' 1 C? C@' ? A' % =?E' 1C@b @? ' G@? ' F F@C% ?' F@' E= ' J @% I ' ?@ F@C' F J @ 1'' ?AC' =? ' A1' F ' 1=J ' F=E' @B@C' @D ' F@C@' ;' ' G= ' C @E' F= ' I C> =C ' A E' ?A ' I@' AJT J @E' F@C@ ?% NId

W 1b .' +*/ ' AAN

"5b G' +=4' ' ' 1' .A' =' .M' "' ' INI' +' :' =/' G 4+(0' J' GDN'' '24/' "VB.' 79/(/' 49/' :214(' /' '' .' +*/ ' YAN' =' +*=2' /W</=' 4 2 ' / : '

W=b '' .' +70 ' ' 1' EE' =' .E' 4' =' =+ :' 49+4' +' 92<=/' 9 19' 2 ' /' 9+=' 9 (/ :' 42' * J/' '' +' :' 3(2<)94' "+(4' 2& 9 =')22 :=' '42' 9<4' 9+=' ' 2 4' #/4' *2 :) / : ' ' ' =' 2 ' /' '' 79 19' 3<()*+(# 5' 3/' 12 ; ; 44/ : ' 9/' "2 ' 4' =' ; / ' 4 2 ' / : ' '' /*' IY' 3<4' ' 24' +=' 9+J ')' 3// '' : /1 : / : ' ' O ' 3 ' 3/ ')' =<362 ' / :

W+b /V ' #2 '=' ,' /+19' .EA' 9/' 1+=/' =' (+49/('] : &&/(/ ' 4*# (/"2(4/ :' '' G' +=4' ' ' 1' .A' =' .G' "' ' IND' 79/(/' 4' =' =4+4/ :' 49+4' ' 2')22 :=' 7 /(/' '' 49/' 92<=/' +4' 49/' 4 ; /' 4' 7+=' 3(20/'' 2"/' ' +' :' 49+4' 49/' 6<:)/=' 7 /(/' 49/(/&2(/' +*=2 2& 2" ' 2 '' 49+4' 4' 7+=' '2' 3<()*+(#' 3/P 1+<=/' +=49/' ' : 14 ; / ' 4' 19+()/ :' +' ' '4/ ' 4 42' =4/+*' 4' ; <=4 - /+ ' ' 42' =4/+* 49/')22 :=' 49/ ' '+' :' 49/(/' 3/ ') ' +' :' 49+4' '249 ') ' 3/ ')' '' 49/' 92<=/' '249 ')' 12<*:' 3/' =42*/ '' ? 3<4' 4' =' +*=2' &<(49/(' =4+4/ :' 49+4' 4' =// ; / :' 42' 3/' 49/' =/ ' =/' 2& 49/' 6<:)/=' +' :' #(/' ' : /1*+(/ :' 4' 42' 3/' 9 =' 2" ' 2 ' 49+4' +*492<) 9' =2 ; /') 22 :=' ;)9' 9+J/' 3// '' "<4' '42' 49/' 92<=/' #/4' & ' / 49/(' 49/' "+(4#' '2(' +' '# 2& 9 =' &+ ; *# 9+:' '9+3 4/ :' 4' 4' 72<*:' '24' 3/' +' ; +' = 2 ' 92<=/' '' 79 19' 3<()*+(#' 12<*:' 3/' 12 ; ; 44/ :

WAb +**+(:$=1+=/' G' +=4' ' ' 1' .A' =' .G' "' ' INE' G' /+19' DM. ' '24/' W+b <**/(' ' +' :' ' 92 ; "=2 ' $=1+=/' G' +=4' 3 : ' G' /+19' DD^' ! (2=/'

5 ' ' x z' ' W ' P ' -

& F@C@ F@ DC A?@C G= ' ?E @E 1AC =' I C> =C ' ?' F@ EG@ ?> ' L<**2(S= 1+=/ '
FA @ A1 =' * C ' A =?E% =?E ' =DD@=C@E F= ' F@ FA @ G= ' ?@G '
I ' =?E 1 ? F@E ?' @B@C ' C@ D@ % @] @D ' F@ D= ? ?>% > =K ?>%
=?E F@ 1 AAC ?> A1 A?@ >=CC@ ;' F= ' =' GAC< ?= % GFA G= ' A?T
=? ' @ J D A @E I ' * C ' A =?E4 @D ' ?' ' 1AC F@ D CDA @ A1
DCA @ ?> % I ' F= ' ?A D=C ' A1 * C ' A =?EH ' EA J @ ' 1= J '
F=E =<@?U DA @ A?' A1 ;' F@ A C ' F@ E% F= ' ' G= ' ?A ' F@
EG@ ?> FA @ A1 * C ' A =?E% " B

A GF@C@ '=DD@=C@E F= ' F@ DCA @ AC F=E = @ ' =<@?' F@ +((=S 1+=/ '
FA @ GF F G= ' ICA<@?' AD@?' ;' F= ' F@ F J @ 1 F=E ?@B@C @D '
F@C@% ?AC=? A1ZF ' 1= J ;' I ' F= ' A?' F@ ? >F ' ?' GF F '
G= ' A ICA @?% = 1 ' 1AC]' ? >F ' I@1AC@% F@ F=E DCA C@E GA F= CT
EC@ @C % GFA G H@ ?A ' ?' =? ' = A?' A1 @CB E@ A F J % A
@@D F@C@ 1AC F@ D CDA @ A1 =< ?>' =C@ A1 F ' >AAE ' =?E J @CT
F=?E K@% GF F G@C@ E@DA @E F@C@ ?;' F@ A C ' G= ' A1 AD ? A?%
F= ' F@ FA @ A E ?A % ?' A? @ J D = A?' A1 =G'% I@ A? E@C@E = '
F@ EG@ ?> FA @ A1 F@ DCA @ AC% " B

& F@C@ F@ AG?@C A1 F@ FA @ F= ' ?A ? @? A?' A1 >A ?>' A 9/(/ 447
(@ E@ ?' ' F J @ 1% =?E J @C@ ' D ' A J @ D@C A?' A' @@D F@C@ = ' 27 ' /("<4/ +
? >F ' ' F@ =?' >@ ' =' @?=? % F@ = J @ C @ ' @ =I F@E;' =?E ! "/(=2 "42 // "
F@ FA @% ?E@C F >! J =? @ % =??A ' I@ A? E@C@E = ' F@ <49/922=/ '
EG@ 0?> FAD @ A1 F@ AG?@C +4 ')94=' 4 **
9/ 1+ ")/4 + r
4/ ' + ' 4
F ' DA ? ' =CA @ DA?' =?' ?E J @? ' 1AC @= ?>' >AAE ' A F@
B= @ A1 1AC ' F ?> ' ?' F@ N 3+ . N@d * C ' 5@=C @ G= '
=' IC@G@C B ?>' ?' * ' I=?< C@@ % =?E AG?@C A1 =' D I FA @ ?'
5= = @ =CE% ?' GF A]' F@ A11@? @ G= ' A J J @E F@ FA @ G= %
= ' F@ ?L@ A1 F@ A11@? @% F ' D% =?E ?' F@ E= ' J @ @? C@ '
? ?F=I @E;' I =' @CB=? ' A1 * C ' 5@=C @H ' G= ' D ' A @@D ?' '
= ' ? >F % 1AC F@ DCA @ A?' A1 F@ >AAE % ? ' A J @ A F@C D I =?'
FA E =<@ DA @ A?' A1 ' F@C@ G@C@ ?' F@ FA @=' ? J I@C A1
I@E % F= C % =?E A F@C =C @ ' A1 1 C? C@% GF F * C ' 5@=C @ F=E
D C F= @E A1 F@ 1AC J @C @?=? % G F =' B @G A' = A J J AE= @ F@
D@C A?' A' GFA J ' F@ J >F ' @ ' % I ' G F ?A' ? @? A?' A1 C@ E ?>'
?' F@ FA @ F J @ 1% @ F@C D@C A?= % AC I ' J @=? ' A1 =? ' A1 F '
@CB=? ' DA?' =' = @ C@ @CB@E% F@ Z E>@ ' G@C@ A1 AD ? A?% F= '
= ' * C ' 5@=C @ ?@B@C ? @?E@E A F=I ' F@ FA @% ' A E ?A % ?'
A? @ J D = A?' A1 =G% I@ A? E@C@E = ' F ' EG@ ?> FA @;' =?E
F= ' ' GA E F=B@ I@@?' ?A I C> =C ' Z1 F@ FA @ F=E I@@?' ICA<@?'
? A ?' F@ ? >F ' NMd

& F@C@ F@ AG?@C A1 F@ FA @ F= ' ?@B@C% I ' F J @ 1 AC I ' =? ' A1 = ')' 49/
F ' 1= J % @D ' ?' % FA >F F@ F= ' @E ' 1AC F ' J @= % =?E = ' 92<=/ &2(
F@ D CDA @ ' A1 L ' I ?@ % ' ' ?A ' F ' EG@ ?> FA @% A = ' A 3<= ' /== 1 '
J =<@ F@ IC@=< ?>' F@C@A1 I C> =C ' ?@ = A?' AA<' =' FA @ 3<4 ' 24=*// "P
?' =' C@@ % =?E ?' ' =CC @E A?' F ' I ?@ ' A1 =' FAD<@@D@ !% =?E ')' 49/(/
E ?@E%4@? @C = ?@E F ' 1C @?E % =?E D= @E F ' E= ' F@C@% =?E F=E
I@EE ?>' D = C ' ;' I ' F@ = G= ' @D ' = ' F ' J A F@CH % GA EAAC '
A11% =?E F@ F=E ?A' @CB=? ' @@D ?>' ?' F@ FA @ ' ?' ?E J @? '
1AC I C> =C ' E@ C I@E F ' = ' F ' EG@ ?> FA @% I ' F@ Z E>@ '
F@ E% F= ' ' A E ?A ' I@ E@@ J @E F ' EG@ ?> FA @% R3B

" B L<**/(S= 1+=/ ' G +=4 ' ' 1 ' .A ' = W/ ' : /(49/ " (2J = 2 ' = 2& 49/ .G
.G ' " ' INE 4* / /12(:1(' :' /+19 ' .EY ' ' / ' 1 ' D ' 27 ' (1" / - :
' 24/ ' W b ' $ W w b ' +J /=S ' +& += && *O S=1+=/ ' G /+19 '
" B +((=S 1+=/ ' G /+19 ' DM. ' 49/ EDY ' G +=4 ' 5 ' 1 ' .A ' =' .G ' " ' INN
/12(:/(' ^ ' +=4 ' ' 1 ' .A ' =' .G ' " B /V ' +(4 ' ' *+#*/# ' ' ?
" ' INE + ' :' ' ' .ME

', 92<=/' K-...' '2411/+=/' 42' 3/' 49/' : 7/** ') ' 92<=/' 2& 4= 27 '/(' 2'' +112<'4 2& 9 =' 211+= 2 '+*' 2(4/ ; "2(+(# +3=/ '1/

& F@?' F@' AG?@C' A1' F@' FA @' F= ' A? @' @? @C@E' DA?' F@' DA @ T A?' =?E' A D= A?' A1' %' F ' F J @ 1%' AC' I ' AJ@' A1' F '1=J %' ' G '?A ' @= @' A' I@' F ' EG@ ?> FA @' A?' = A ?' A1' =? ' A =T A?= ' AC' @ J DAC=C ' =I @? @%' @B@?' FA >F' ?A' D@C A?' I@' @1' ?' ' I!3 F %' 1' ' F=B@' =' EGE ?> FA @%' =?E' DA?' A = A?' F@' =?E' = ' F '1=J ' I@' =I @? '1AC' =' ? >F ' AC' JAC@%' I C> =C ' J = ' I@' AJ J @E' ?' F@ C' =I @? @' ;' =?E%' A' 1' ' F=B@' GA' J=? A?' FA @ %' =?E' I@' AJ@ J@ ' G F' F '1=J ' = ' A?@%' =?E' AJ@ J@ ' = ' F@' A F@C%' F@' IC@= F' A1' A?@' A1' F@ J ' ?' F@' ? 'F ' J@%' ?' F@' =I @? @' A1' F@' 1=J %' G ' I@' I C> =C %' N d' A%' 1' ' F=B@' =' F=J I@C' ?' =' A @>@%' AC' ??' A1' A C %' GF@C@' %' = ' AE>@ ' ?' @C J ' J @' ;' =?E%' ?' F ' =I @? @' ?' 'F@ B= = A 1' F@' ZF=J I@C' I@ ICA<@?' AD@?%' F@' =J @' C @' G ' =DD %' 7C3' ' 4

<4(J$=' 1+=/ F@' 1A AG ?>' = @' G=' 'E@ E@E' ?' A?1ACJ ' G F' F@ @' DC ? ' D @ ' F@' AG?@C' A1' =' FA @' ?' & @ J ? @C%' ?' GF F' F@' EG@ % AA<' =' ZA C?@ ' ? A' AC?G= %' G F' ? @? ' A' C@ C?;' =?E' @?' F ' G 1@' =?E' 1=J ' A ' A1' AG?%' =?E' @1 ' F@' <@ ' G F' =' 1C @?E' A' AA<' =1 @C' F@' FA @' ;' =?E%' =1 @C' F@' F=E' I@@?' >A?@' =' JA? F%' ?A' D@C A?' I@ ?>' ?' F@' FA @%' ' G=' ' ICA<@?' AD@?' ?' F@' ? >F %' =?E' CA I I@E'' ' J A? F' =1 @CG=CE %' F@' AG?@C' C@ C?@E' G F' F ' 1=J %' =?E' =>= ?' ?F=I @E' F@C@' F ' IC@=< ?>' G=' 'FA<ZD?' A' I@' I C> =C 4'NW d

<4 49/(/' ; <=4' 3/' +'' & ' ?' = @ ' A1' F ' < ?E' F@C@' J ' I@' =?' ? @? A?' A?' F@' D=C ' A1' F@' AG?@C' A' C@ C?' A' F ' FA @%' 6 !& > '" " #!'G 1AC' 1' F@' AG?@C' F= ' b @E' G FA ' =? ' ? @? A?' A1' C@ C? ?>%' F@' IC@=< ?>' A1' =' FA @' A' @1 ' G ' ?A ' I@' I C> =C ' 1 3

<49(27 'S= 1+=/ F@' DC A?@C ' G@C@' ?E @E' 1AC' =' I C> =C ' ?' F@' EG@ ?> FA @' A1' =' * C ' =<?@ %' =?E' @= ?>' E B@C ' >AAE ' * C ' =<?@ ' = @E' F= ' F@' J =E@' @' A1' F@' FA @' ?' b @ A?%' GF F' G= ' = @E' = ' = <?@ %' = ' =' A ? C ' FA @%' ?' F@' J J @C' J @%' F ' F @1' C@ T E@? @' I@ ?>' ?' A?EA?' ;' =IA ' F@' @?E' A1' F@' J J @C' I@1AC@' F@' A11@? @' G= ' A J J @E%' F@' C@ J AB@E' RE F' F ' GFA @' 1=J ' A' A?EA?%' =?E' ICA >F ' =G= ' =' A? E@C=I @' D=C ' A1' F ' >AAE ' $ =?E' ?' F@' " AB@ J I@C' 1A AG ?>' F ' FA @' G= ' ICA<@?' AD@?%' =?E' ?' D=C ' C 1 @E;' DA?' GF F' F@' C@ J AB@E' F@' C@ J = ?E@C' A1' F ' FA @FA E' 1 C? C@%' @] @D ' =' A <%' =?E' =' 1@G' A E' I@E @=E %' =?E' AJ@' J I@C' A1' B@C ' @' B= @' ;' @=B ?>' ?A' I@E' AC' < F@?' 1 C? C@%' ?AC' =? ' F ?>' @ @' 1AC' F@' = AJ J AE= A?' A1' =' 1=J ' @ ?>' = <@E' YGF@ F@C%' = ' F@' J @' F@' A' E 1 C? F@E' F ' FA @%' F@' F=E' =? ' ? @? A?' A1' C@ C? ?>' A' C@ E@' F@C@%' F@' E@ =C@E' F= ' F@' F=E' ?A ' AJ@' A' =? ' @ @E' C@ A A?%' GF@ F@C' A' C@ C?' AC' ?A ' ;' I ' &!=' C= F@C' ? ?@E' A = ' A' b ' F@' FA @%' =?E' A' @ ' 1AC' @' C@ J = ?E@C' A1' F ' @C J ' F@' A C ' G@C@' A1' AD V{A?' F= ' F@' DCA @T AC' F=B ?>' @1 ' F ' FA @%' =?E' E 1 J F@E' ' ?' Fu' J =??@C' I@1AC@' J @? b?@E%' G FA ' =? ' @ @E' C@ A A?' A1' C@ C? ?>%' I ' C= F@C' ? ? ?>' A' F@' A? C=C %' F@' FA @' A E' ?A %' ?E@C' F8 @' CT J =? @ %' I@' E@@J @E' F ' EG@ ?> FA @' = ' F@' J @' F@' 1= ' G= ' A J J @E%' NJ d

WDM' L"=4' GG' ' +*/' YA ' H' '=4' YI' +2' 3' 4 4' L 3 5' W b
W4B' .' +*/' AAY' < ; ' EG
R*B' : ' 3 :
"?B /V' ; 4(#' G' +=4' ' M ' 1' .A' =' .' "' INY' 1 4/ :' +*=2' '' 2=4' DD' &(2 ;' ' /'42'' +' :' 9+""*/' +=' +' 1+=/' '"2'' +' 3<()*+(#' '' 49/' 92<=/' 2& (' 1* 2*9' '' /V' &.' (09 ; ' G' 4+(0 J' GDN' 22 : ' ' 9/* :' 49+4' 49/' 2&&/' 1/' 2& =4/+* ')' 49/' 12 ; ; 44/ : ' +*492<)9' 49/' 27 '/(' +' :' 9 =' &+ ; *#' 9+ :' */&4' = V' ; 2 ' 49=' 3/&2(/' 9+(')' */&4' 49/' &<(' 4<(/' +' :' '4/ ' : ')' 42' (/4<(' WDD 2=4' DD' I' *+1' 2 ; GGA " B' <43(27 'S' 1+=/' -2=4' DY' 9/' "(=2' /(=' 7/(/' 12' J 14/ :' 2& =4/+* ')' 49/' 1*210' 1'

A 1 = J = ? @=B@ F FA @ G FA q ? ? @ ? A1 B ?> ? => >= ? =? =E J A=? A @ = = G=C@FA @ A? =? =E F= D@C A? ? A A1 F 1=J A @@D ? A > =CE F@ DCAD@C F@ FA @ =??A I@ E@ C I@E = F EG@ ?> FA @ ?@ A] B@E ? * =C ?H =?@ I C@ J AB@E A F@ = J =C<@ =? =E <@D F@ FA @ ? ! * =C DH =?@ = = G=C@FA @ A? ;? ?A?@ A1 F 1=J AC @CB=? C@?Z= ?@E F@C@ I GA GA J@?? GFA GAC<@E 1AC F J ? F I ?@ @D F@C@ A > =CE F@ DCAD@C ; F@ DC A?@C A @ A F@ = J A ? A1 = I A 1AC F ?> ? ? F@ FA @ =?E F@ Z E>@ F@ E F= = ?? ? J @? => >= ? F J E@ C I ?> F@ FA @ = F@ EG@ ?> FA @ A1Z A] G= G CA?> N d

FA >F = J ? @=B@ F FA @ =?E ?@B@C J @=?? A B@ ? => >= ? @ 1 F@ @ D=C A1 = = FAD =?E @ = @CB=? =?E F 1=J 1@ =?E @@D ? =?A F@C D=C A1 1AC 1@=C F@ D = @ FA E I@ CA I I@E =?E @ F@ C@ A AE>@C F@ F= I = A?? I F@ @CB=? =?E F 1=J = F=I = A?? I F@ AG?@C =?E F@ FAD G I@ A? E@C@E D=C A1 F EG@ ?> FA @ F@ ?T E J @? G= 1AC I C> =C ? F@ EG@ ?> FA @ A1 @?E= F@ D = @ ICA<@?? A G= = FAD D=C @ A1 = EG@ ?> FA @ GF F @ F=E ?F=I @E ; F@ F=E @1 F@ EG@ ?> FA @ =?E ?@B@C J @=? B@ ?? => >= ?' I C@ = ?@E F@ FAD =?E @ F@ A F@C CAA J A AE>@C ; =1 @C AJ @ J @ F@ F=E D = @CB=? =?E F 1=J ? A! GA A1 F@ CAA J @ F@ D = @ FA E I@ CA I I@E =?E F@ B@E F@C@ DA?? = = @ C@ @CB@E F@ Z E>@ FA >F D T ?> ? = @CB=? =?E 1=J A B@ B@C E 11@C@? 1CA J D ?> F@ J ? J @C@ A ' @@D =?E F= F G= A I@ E@@ J @E @?E= H ZD @ =?E F= F@ A?B A?? G= C >F !E3

@@J F= F@ J @C@ = = @ A1 = @?@ J @? = = = AE> ?> AC F@ ?> A? DA?? AJ @ D=C =C A = A? G ?A I@ F= =?? ?F=I =? = G A? @ = EG@ ?> FA @ ?GF F I C> =C = =? I@ AJ J @E " B F G= =>C@@E I = = F@ Z E>@ F= F@ 1= A1 = @CB=? F=B ?> @D ? = I=C? A?? F@ ? >F ? GF F G= ICA<@?? AD@? =?E 1AC @B@C= ? >F I@1AC@ F@ I@ ?> D F@C@ 1AC F@ D CDA @ A1 G= F ?> F @B@ J =E@ ?A AC A1 E 11@C@? @ ? F@ b @ A? GF@ F@C F@ A11@? @ G= I C> =C AC ?A N d ?E F@ C J =? @ A1 = DAC @C ?> ? = G=C@FA @ 4 56 < 244# GF F A? 1AC = D=C =C D CDA @ EA@ ?A J =<@ = EG@ ?> NWd F@ b @ A? F@C@1AC@ C@ D@ ?> I CT > =C ? F I=C? AC G=C@FA @ G C@ J = ? Z = 1 ?A D@C A? F=E @D ? F@ J A I@E DA @E A1 I F@ DC ? D @ GF F F=B@ Ik@? I@1AC@ E @E = A F@ C I@ ?> AC ?A < ! 2E6" A1 F@ J =? A? AC EG@ Z> FA @ N d

DA ? A1 AJ @? @ =C @ ? F@ = @ A1 = ? @] @ AC D ?> @CB=? ? A F@ FA @ A1 F @ = AC I ?A >A ?> A B@ F@C@ F J @ 1 = @ A1 F < ?E A CC@E GF F F = @E E @E ? F FA @ =?E F] @ AC D @CB=? ? A F GFA AE>@E ? = =?E G@C@ A? IA=CE G=>@ ; I ?@B@C AE>@E F@C@ F J @ 1; =?E DA? =? ?E J @? 1AC I C> =C F@ b @ A? G= GF@ F@C F J >F I@ = @E F@ J =? A? FA @ A1 F@ J A C

) /V L*+'<+)+' . E& W(b ; 49S 1+=/ 3# 4/ '' 2& 49/ <:) /= /V ! 332<= +#*/J' 1 4/ : &(2 ; 2(: ') S NY + : /(+=4/(.EG. 6/ + 4 L2(=4/(S ' '' G +=4 1 W" b G +=4 M .A = . . " IND .A = . . " IND 2OB (27 S-1+=/ G +=4 1 .A W=b : " . I O = . . " IND + : = . I " YM.

! ! #' A' F ?<' ' J >1 %' : 6> ' < ' " 6 ' ! #' < " ' N d ' !
G= ' ?A ' ?@ @ =C ' A' E@ E@' F@' DA ? ' ?' F= ' = @%' = ' ' C?@E' A '
A?' F@' @B E@? @' F= ' F@C@' G= ' ?A ' =' 11 @? ' IC@=< ?>' A1' F@'
FA @' ;' =?E' D@CF=D ' ' GA E' I@' E 11 ' A' C@ A? @' F@' AD ? A?%'
A' GF F' F@' A C ' ' = E' ' F=B@' ? ?@E%' G F' AJ@' A1' F@'
E@ E@E' = @ ' =?E' DC ? D @ ' DA?' F ' IZ@ %' 1' F@' 1= ' G@C@'
F= ' F@' @]@ AC' E E' ?A ' A? @ J D = @' =? ' A D= A?' A1' F@' FA @'
I ' F J @ 1%' =?E' F= ' F@' J @C@ ' D ' F@' @CB=? ' F@C@' 1AC' F@' D CT
DA @' A1' =< ?>' =C@' A1' F@' FA @' =?E' 1 C? C@%' ' F@ ' FA E' F@'
DCAD@ E ' E DA @E' A1' = ACE ?>' A' F ' C %' 1 3

&49/' 27 ' / (P
=9 '" 2& 49/'
; + '= 2 ' '
92<=/X

' C@ J = ? ' 1 C F@C%' ?' C@= ?>' A1' F@' J =? A= ' AC' EG@ ?> FA @%'
A' ?b C@' = ' A' F@' D@ H A?' GFA' ' A' I @' E@@ J @@1 F@' 4! "' 4 *' %' ?'
ACE@C' A' I@' = I @' A' = @' ACC@ ' ?' F@' ?E ?1@? ' F@' ?= J @' A1'
F@' D=C %' ?' GFA @' EG@ ?> FA @' F@' I C> =C ' ' = 1@>@E' A' F=B@'
I@@?' AJ J @E%' = FA >F' ?' J A ' = @ ' GF@C@' =' J =<@' F= '
I@@?' J =E@' ?' F ' C@ D@ ' F@' A C ' GA E' = J @?E' F@' ?E J @? '
?E@C' F@' :' , ' A' 3 @ ' ' %' ' %' ?A @E' BA ' %' D ' 8-

F@' IZ@ ' ' C= F@C' A1' =' A J D = @E' ?= C@%' I %' 1CA J' F@'
= @ ' G I F' F=B@' I@@?' F F@C A' E@ E@E%' ' @@ J ' F= ' F@' J = @C = '
DA ? ' A' I@' = @C = ?@E' G ' I@%' GF@ F@C' F@' AG?@C F D' C@ J = ? '
G F' F@' DCAD@C' AG?@C' A1' F@' EG@ ?> 'A @%' =?E' ' @]@C @E' I '
F J %' @ F@C' I ' F ' AG?' A D= A?%' AC' I ' F= ' A1' A F@C' D@C A? ' A?'
F ' = A ? %' AC' GF@ F@C' F@' DCAD@C' AG?@C' F= ' > B@?' F' =?' ? @C@ '
A A F@C' D@C A? %' ?' F@' GFA @' AC' ?' D=C ' A1' F@' EG@ ?> FA @%' =
A' A? @' =?' AG?@C F D' ?' F' A F@C' D@C A?

7 ' / [=9 "'
79/ (/' 49/'
211<"+4 2 '" =
3# "/(=2 ' = 792'
+(/' "+(4 2&
49/' 27 ' / (S='
&+ ; *#

F@' AG?@C' A1' =' EG@ ?> FA @' J = ' @]@C @' F ' AG?@C F D' I '
F ' AG?' D@C A?= ' A D= A?%' AC' I ' F@' A D= A?' A1' R=? ' D@C A? '
GFA' I ' =G' =C@' E@@ J @E' A' I@' D=C ' A1' F ' 1=J ' F ' EA C ?@'
F= ' I@@?' =CC @E' A' =' >C@= ' @] @? ' ?' F@' = @' A1' =' G 1@' AC'
GF@C@' ' =DD@=C@E' F= ' =' =E %' GFA @' FA @' G= ' CA I I@E%' F=E' 1AC'
J =? ' @=C ' B@E' @D=C= @' 1CA J ' F@C' F I=?E' ;' =?E' F= %' GF@?' F@'
G= ' =I A ' A' =<@' F@' FA @%' =' @= @' A1' ' G= ' DC@D=C@E' ?' F@C'
F I=?EH ' ?=J @%' I ' F= ' F@' C@1 @E' A' @]@ @%' =?E' = E' F@' GA E'
F=B@' ?A F ?>' A' EA' G F' %' ?' A? @b @? @' A1' GF F' F@' =>C@@E'
G F' F@' =?E ACE' F@C @ 1%' =?E' F=E' A? =? ' D= E' F@' C@? ;' ' G= '
I A E@?' DA?' =?' ?E J @? ' 1AC' I C@=< ?>' AD@?' F@' FA @' F= ' ' PB= '
G@ ' = E' = ' F@' EG@ ?> FA @' A1' F@' F I=?E%' 1>3' A' GF@C@' =
J =CC @E' GA J =?' B@E' =D=C ' 1CA J ' F@C' F I=?E%' DA?' =?' ? AJ@'
=C ?>' 1CA J ' DCAD@C ' B@ @E' ?' C @@ ' 1AC' F@C' @D=C= @' @%' '
G= ' F@ E%' F= ' =' FA @' GF F' F@' F=E' F C@E' A' B@' ?' J >F ' I@'
E@ C I@E' = ' F@C' F I=?EH ' EG!@ ?> FA @%' FA >F' F@' D= E' 1 @'
!C@? ' I ' A1' F@C' @D=C= @' DCAD@C %' =?E' F@' F IZ' ?E' F=E' ?@B@C' I@@?'
?' ' F@' ?E J @? ' E@ C I@E' F@' EG@ ?> FA @' 1 C ' = ' F@'
FA @' D1' ' %' =?E' @ A?E ' = ' F@' FA @' A1' F ' G 1@ ' '=DD@=C@E'
F= ' F@ ' B@E' =D=C %' =?E' F= ' F@' G 1@' I @E' DA?' D !AD@C '
GF F' F=E' I@@?' F@C ' I@1AC@' J =CC =>@%' =?E' GF F' G= ' B@ @E' ?'
C @@ ' 1AC' F@C' @D=C= @' @' ;' F= ' F@' FA @' G= ' ?A' D=C ' A1' F@'
@ @E' DCAD@C %' I ' G= ' F C@E' I ' F@' G 1@' GFA' D= E' F@' C@? ' 1AC'
%' =?E' F@' F I=?E' F=E' ?@B@C' I@@?' ?' ' DA?' =' = @' C@ @CB@E%'
F@' Z E>@ ' G@C@' @=C' F= ' F ' G!= ' A' I@' E@@ J @E' ?' =G' F@

" B' 2 ' /=S' 1 - / ' &(2 ;' 9+"" /S' ' " B' L+((/S' 1+=/ ' /*' IH' II ' IA' //'
G' ' < ; ' HMA' 1 4/ : ' '' G' +=4' ' */V' ; #49 ' A' ' ' GM . ' "/(' 2(:'
' 1' .A' =' .G' "' INN /' 4/ (: / ' ' ' ' ,
"C' //' +J /=S' 1+=/ ' :' " ' G.

EG@ ?> FA @' A1' F@' F I=?E' ;' 'G=' F@' EG@ ?> FA @' A1' AJ@' A?@' ;' 'G=' ?A ' F=' A1' F@' C @@ %' 1AC' F@ 'F=E' ?A F ?>' A' EA' G F' ';' 'G=' ?A ' F@' G 1@H %' I@ = @%' =' =G%' F@' A E' F=B@' ?A' DCAD@C ';' ' A E' F@?' A? ' I@' F@' F I=?EH 'Nad ?'=' = @C' = @' F@' ?E J@?' G=' 1AC' I C> =C ' ?4 F@' EG@ ?> FA @' @1' ?> %' GFA' E E' ?A B@' F@! %' I ' F@' FA @' G=' F '1AC' =' A?>' @CJ%' =?E' F@' 11@C@E' F 'G 1@' A' B@' F@C@' @D= != @' 1CA J' F J ' @' F=E' =>C@@E' A' F@' @D=C= A?%' =?E' F=E' > B@?' F@C' D' F@' FA @%' I@ = @' F@' D@ @E' =' C ? ?=' ? @C A C @' I@ G@@?' F@C' =?E' A?@' & @I E= @%' =?E' F=E' = AG@E' F@C' = A' A' =<@' =' I@E%' =?E' GF=' 1 C? C@' F@' FA @' F@H B@Z'' F@C@' G F' & @1@ E= @%' GFA' D= E' F@' FA @T <@@D ?>' @ D@? @'' I ' ?@ F@C' C@?' ?AC' =]@ ' DA?' =' = @' C@ @CB@E%' FNZ'Z E>@ ' FA >F ' F=' F 'G=' DCAD@C 'E@ C I@E' =' F@' FA @' A1' ?> 'N ;d & F@C@' =' DC A?@C' G=' ?E @E' 1AC' IC@=< ?>' ? A' F@' EG@ ?> FA @' A1' K=I@ F' %' =?E' '=DD@=C@E' F=' F@C' F I=?E' F=E' I@@?' A?B @E' A1' 1@ A? %' =?E' G=' ?' DC A?' ?E@C' F ' @? @? @' GF@?' F@' FA @' G=' ICA<@?' ? A%' 'G=' F@ E%' A?' =' = @' C@ @CB@E%' F=' F@' FA @' G=' J DCAD@C ' E@ C I@E%' = FA >F' F@' G 1@' A? ? @E' ?' F@' DA @ A?' A1' 'NLd ' 1' =' = @' FA E' =C u' ?' GF F' F@' =G' GA E' =EZ E>@' F@' @D=C= @' DCAD@C ' A1' F@' J=? A?' A' I@' ?' F@' G 1@%' F@' F=B ?>' = A' F@' @] B@' D> @ A?%' ' FA E' @@J' F=' ?' F' = @' F@' I C> =C ' GA E' DCAD@C ' I@' = E' A' I@' AJ J @E' ?' F@C' J=? A? FA @%' =?E' ?A ' ?' F=' A1' F@C' F I=?E%' 7'3'

&/' 2& +' 12'J 14/:' &/*2'

F@' AG?@C' A1' =' EG@ ?> FA @' J=' = A' A D ' ' I ' J @=? ' A1' @CB=? ' F %' ?4'=' = @' GF F' F=' I@@?' = C@=E ' J @? A?@E%' GF@C@' F@' @CB=? ' A1' =' 1=C J @C%' =?E' F '1=J %' B@E' ?'=' A =>@' =EZA ? ?>' F ' J= @CH' FA @%' GF F' F@' AA<' A' I ' =>C@@ J @?' G F' F ' J= @C%' GF@?' F@' G@?' ' ? A' F@' @CB @%' I '1AC' GF F' F@' D= E' ?A' C@? ';' A? '=?'=I= @ J @?' G=' J=E@' ?' F 'G=>@ %' A?' = A ?' A1' F '1=J 'I@ ?>' A' C@ E@' ?' F@' A =>@';' = ' F@' Z E>@ 'NG F' F@' @] @D A?' A1' C% %' GFA' EA I @Ed%' F@ E' F=' F 'G=' ?A' J AC@' F=?'=' @? @' A' F@' @CB=?' A' AE>@' ?' F@' A =>@%' =?E' ?A ' =' @ ?>' A1' ' A' F J';' =?E'ZIF=' F@' A =>@%' F@C@1AC@%' A? ? @E' D=C 'A1' F@' J=? A? FA @' A1' F@' 1=C J @C 'N 'd

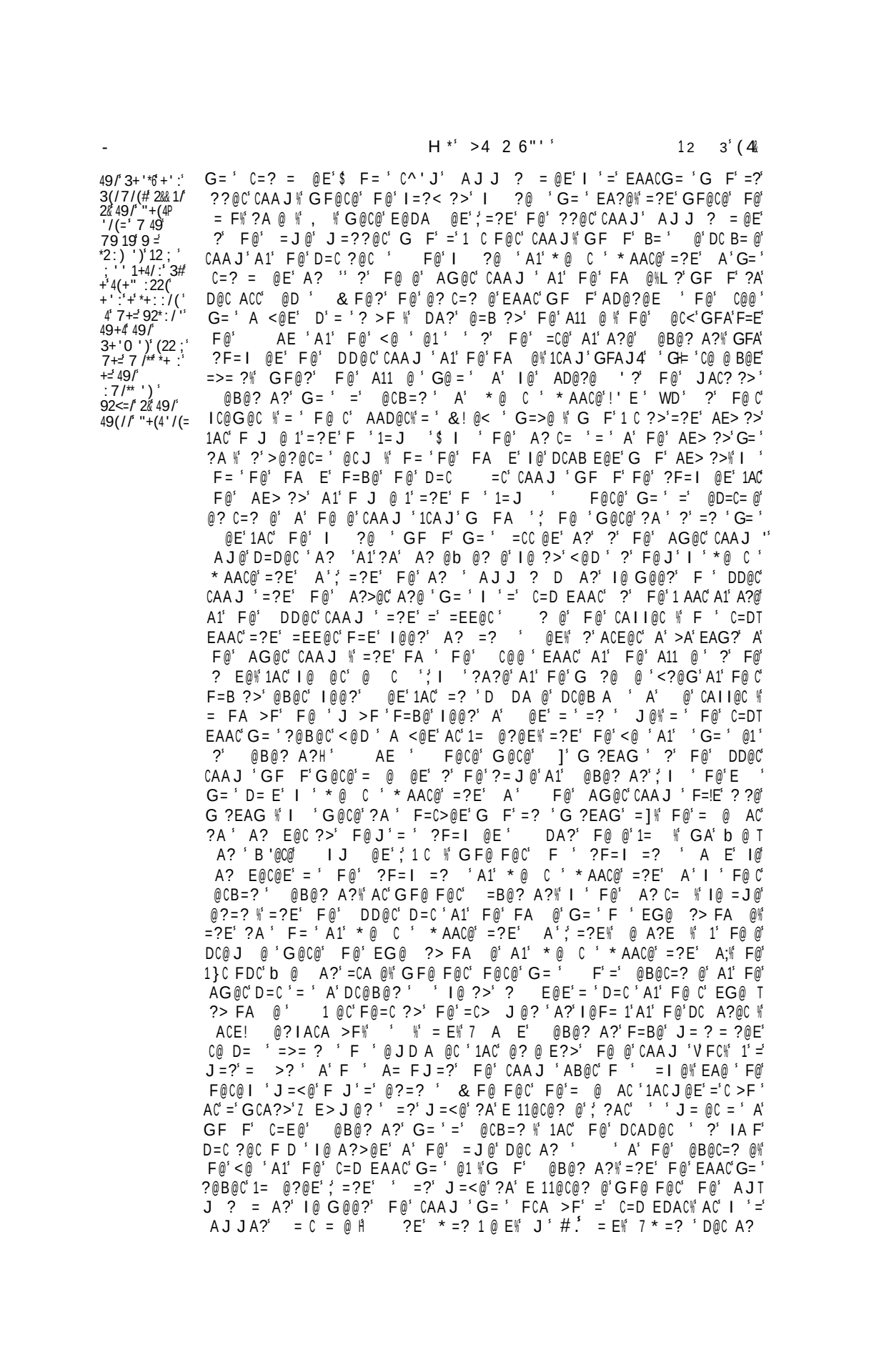
9/' 92<=/' 2& "+(4' /(=' 42+# 3/' *+ :' +=' 49/ (' 92<=/' 492<)9' 2 '*# 2 '/' 2& 49/ ;' : 7/** '' 4

'FA @%' F@' ZA ? ' DCAD@C 'A1' D=C ?@C ' ?' C=E@%' =?E' ?' GF F' F@ C' I ?@ ' ' =CC @E' A?%' J= EZ@' E@ C I@E' = ' Fp' EG@ ?> FA @' A1' = ' F@' D=C ?@C %' FA >F' A? 'A?@' A1' F@ J' C@ E@ ' ?' 11' 163'

9/(/' 49/' =/(J+' 4' 2& 49(/ /' "+(4' /(=' '' 4(+ :' /' 9+ :' 7 / /0*# 7+)/=' +" :' =2 ; /' (22 ;' =' +=) ' / :' 42' 9 * '" &2(' =' *2 :) ') ' 2J/(

?A F@C' = @' =DD@=C ' A' F=B@' DCA @@E@E' DA?' F@' =J @' DC ?T D @ ' F@' DC A?@C 'G@C@' ?E @E' 1AC' =' I C> =C ' ?' F@' EG@ ?> ' FA @' A1' * @ C ' * AAC@%' =?E A?%' =?E' | =J A?%' GFA' G@C@' D=C ?@C ' ?' F@ C' I ?@ ' A1' I=?<@C %' =?E' = A' ?' =' IC@G@C ' A?T @C?' ;' =?E' G@C@' F@' AG?@C 'A1' F@' FA @' ?' b @ A?' F@' AG@C' CAA J 'A1' F@' FA @' G@C@' FC@@' ?' ? J I@C%' F=B ?>' A? 'A?@' @? C=? @' 1CA J' G FA %' I '=' EAAC' AD@? ?>' A' F@' C@@ %' GF F' G=' F@' EAAC' ICA<@?' AD@?' A' AJ J ' F@' 1@ A? ' ' AD@?@E' ? A' A?@' A1' F@' FC@@' CAA J ' ?' GF F' F@' @C<H' I ?@ 'C@ = ?>' A' F@' IC@G@C

W(t' /V' ' L(/ '19' ' ' ' IN. " 7B 6 0' ' *&2(: ' ' ' ' A.D W+?d /) ' 9 4/9/+: 'N ' ' ' IGN' ' ' =' 42' 49/' "(/=/ '4' *+7' 2& &2(&/ 4<(/' &2(' &/*2 '#' =/ /' J2*' ' "' .MH "5B' G' +=4' ' 1' .A' =' .Y' "' AMI' // HH' ' HI' [14' 1' NH' W49/' +((/: K 2 ; +' =' (2"/(4# 14' .ED t' +' :' 49/' J2(1/' 14' GM' 'G.' /4' 1' EA' ==' G.' GA (27 'S' 1+=/' G' +=4' ' ' 1' .A' =' .I' "' AM.' U *=-' ' ' ':' =/ /' /(4 /' &' /+< ; 2 '4' .Y' +=4' HH' 22' /V' ' +;2=' ' "' H. ' / ' ' 49/+' ' ' x ' ' ' HGN



=B@' FA @ '> B@?' F@ J ' A' B@' ?%' = ' DAC @C ' = ' D=C< >= @ '; 1' ='
J = @C' C? ' =G= ' F ' @CB=? %' EA@ ' '1A AG' F= ' F@' =??A ' @B '
F J ' ' F@' @?E' A1' F@' @=C'V' A E' ?A ' F@' DCA @ AC ' F=B@'
C?@E' A ' F ' J =?' GF@?' F@ ' GA E' , ' N d
?' F@' C = ' A1' =' I C> =C ' ?' F@4FA @' A1' ' A?@ %' ' =DD@=C@E'
F= ' A?@ ' G= ' ?' F@' @CB @' A1' * C ' # A A?%' F@' =?E ACE' A1' F@'
FA @;' D=C ' =a1 F@' FA @' G= ' @E' = ' AC@' CAA J ' 1AC' A A?H '
>AAE %' =?E' C' F@' A F@C' D=C ' A?@ ' C@ E@E' $?A' A?@' @ @' @B@C' C@T
E@E' F@C@ ' # A A?' D= E' F@' C@? ' =?E' =]@ %' =?E' ?A F ?>' G= '
D= E' I ' A?@ ' X1AC' F ' A D= A?%' @ F@C' I ' E@E A?' 1CA J ' F '
G=>@ ' AC' A F CG @ '' =?E' ' G= ' F@ E' qF= ' F@' FA @' A >F ' A' F=B@'
I@@?' E@ C PDE' = ' 1A A?H ' 1 3
F@' =J @' C @%7A1' F@' A D= A?' A1' F@' @CB=? ' I @ ?>' F= 'A1' F@' G?@C FD'Aî
J = @C%' G ' A E' G F' C@ D@ ' A' = ' D@C A? ' =?E ?>' ?' Fp'C@ = A?'
A1' @CB=? %' =?E' ?A ' F= ?>' F@' @] B@' DA @ A?' ?AC' D= ?>'C@? %' qA= @ ' 4
F@C@1AC@%' =D=C J @? ' ?' F@' 6 ?>H ' D= = @ %' AC' ?' F@' FA @ ' A1' AC' ?' F@
?A I @ J @?' 1AC' F@ C' @G=CE ' =?E' F @1' @CB=? %' J ' I@' = E' = ' F@' FA ' DA1='
J =? A? FA @' A1' F@' 6 ?>' AC' ?A I @ J =?%' 7#3' ACE ?> %' GF@C@'
' FC@@' D@C A? ' G@C@' F=C>@E' G F' F=B ?>' I CA<@?' ? A' F@' AE> ?> '
A1' C' ' ?>= @%' = ' & F @F= %' ' G= ' =>C@@E' F = ' F@' ?E T
J @? ' A E' I@' 1AC' I C@= ' ?>' F@' 6 ?>H ' J =? A?%' = @E' & F @T
F= ' N@d' A' GF@C@' =' J =?' G= ' ?E @E' 1AC' I C@=< ?>' ? A' =' F= J I@C'
?' A J @C @ FA @%' =?E' F@' ?E J @? ' F=C>@E' ' A' I@' F@' J =? A? '
FA @' A1' F@' D@C A?' GFA' AE>@E' ?' %' ' G= ' =>C@@E' F= ' ' @'
GFA @' FA @' I@ A?>@E' A' F@' W @@? J A F@C%' =?E' F@C@1AC@' F= ' F@'
?E J @? ' G= ' I =E ' 1**3' ?E' GF@C@' =' FA @' = ' F@ @=' G= ' I CA<@?'
? A%' GF FkG= ' @E' 1AC' =?' A11 @' ?E@C' >AB@C? J @? %' = @E' F@'
?B= E' 11 @%' =?E' F@' C@? ' =?E' =]@ ' A1' GF F' G@C@' D= E' I '
>AB@C? J @? '; ' G= ' FA E@?' F= ' F@' ?E J @? ' G= ' E@1@ B@' ?'
= ?>' ' A' I@' F@' FA @' A1' =' D@C A?' GFA' A D @E' F@' GFA @' A1'
F@' DD@C' D=C ' A1' 'N>d' ?' ?E J @? ' 1AC' =' I C> =C ' ?' F@'
AJ FA @' C >F ' E@ C I@ ' ' = ' F@' EG@ ?> FA @' A1' F@'
6 ?>%' = ' F@' A D @ ' ' I 'F ' @CB=? %' N1 d' ?' ?E J @? %' = A%'
1AC' =' I C> =C ' ?' F@' EG@ ?> FA @' A1' F@' = ' ?E =' AJ D=? '
G= ' FA E@?' A' I@' >AAE%' F@' FA @' I@ ?>' ?F=I @E' I ' F@' @CB=? '
A1' F= ' AJ D=? %' N d' ?E' GF@C@' =?' ?E J @? ' F=C>@E' =' I C>T
=C ' ?' I C@=< ?>' ? A' F@' J =? A? FA @' A1' F@' J = @C%' 1@ AG %' =?E'
FA =C ' A1' @??@ ' A @>@%' ?' = J I C E>@' ; F@' 1= ' I@ ?>' F= ' F@'
E"! 4 '" I CA<@' ? A' F@' I @C ' A1' F@' A @>@%' = ' F@' Z E>@ %' DA C'
C@1@C@? @' A' F@ J %' F@ E' F= ' ' G= ' I C> =C %' "*B

Wxb' /V' ' 42104 2' [' G' +<' 4' HHN'
G' /+19' .M.A')94' 2&' 49/' 6< :) /='
492<)94' 49+4' 4/J/ ' =2 '' 7+=' 24' 4/ ' + ' 4'
3<4' ' 9+3 4/ :' 2 '*# '' 49/' 12<(=/' 2&' 9 ='
=/ 7 1/ ' 92 ; =2 ' ' ' (+9+ ; ' '
+7 (/ ' 1/ ' ' + ' :' 9+ ; 3(/ ' ' '
' ' <' : /(' 49/' ' + ; /' 2& /V' &' 4210'
' ' ' ' ' .EA' 9/' 6< :) /=' : :' ' 24'
+&4/(7+(:="(2 '2< '1/' + ' #&<(49/(' 2" ' 2 ''?
3<4' 49/' "(=2 ' /(=' 7 /(/' /V/1<4/ :' +112(: ')'
42' 49/ (' =/ ' 4/ ' 1/
W1b' /) ' 2<(4/ ' +#' A' 2V' ' '
G.E ' 9/' /12(: /(' +&4/(' 12 ' =<*4 ')'
*: /(=2 ' ' =4 **' /' 4/(4+ ' /' : :2<34='
79/49/(' 49/' 92<=/' 7+=' 24' ( ) 94*#' : /=P
1(3/ : ' 9/' '&+() '+*' 24/' =" /+0=' 2&' 0+'
92<=/' 1*2=/' 42' S=' "*+1/' 2&' 3<= ' /== $ 2&

79 19' 49/(/' =' 2' /J : / ' 1/' '' 49/' (/ "2(4
" B' :' +*/ ' AAY ' YAD ' G' +=4 ' ' '
1' .A' =' .I ' "' AMM
W1b' /Ve ' ** + ; = ' :' +*/ AGG
W wb' <() /==S=' 1+=/ ' :' /*' GD
"3B' /#42 ' S=' 1+=/ ' :' /+19' HGI ' ''
+1' 3(' 4 4' L 3 + *#' ? b' '' 49/'
' 24/=' 49/(/' =' +' O ' '' 792=/' 92<=/'
=4/+* ')' '' 49/' ' J+* :' && 1/' +4' 9/*=/+'
=92<*:' 3/' *+ :' 42' 3/
' /V' 2(: +' ' D' ' ' IHG'
! +=/*//' ' +' :' ! <(' /#'
W4b' 10/4S=' 1+=/ ' G' +=4 ' ' ' 1' .A'
=' .I ' "' AM.
"*B' +#' +(: S=' 1+=/ ' G' +=4 ' ' ' 1'
.A' =' .I ' "' AM.

~ J' +70 '=S= 1+=/

!' F@' DC A?@C' G=' ?E @E' 1AC' IC@=< ?>' F@' J=? A? FA @' A1' ' AC %' ?' F@' ? >F ' J @' ' =DD@=C@E' F=' F@' FA @' I@ A?>@E' A' F@' 1C =?' AJD=? ';' AC 'G=' =?' A11 @C' A1' F@' AJD=? ';F@' =?E' J=? 'A F@C' D@C A? %'=' A11 @C 'A1' F@' AJD=? %'F=E' @D=C= @' =D=C J@? ' ?' F@'FA @%' ?'GF F' F@ ' ?F=I @E';' =?E' F@'=D=C T J@?' A1' AC 'G=' F='GF F'G=' ICA<@?' AD@?%' 'G=' FA E@?' F=' F@'=D=C J@?'A1' AC ' A E'?A'I@' = @E'F ' ?==? A? FA @% I@ = @'F@'=?E' F@' A F@C ' ?F=I @E' F@' FA @' J@C@ '=' A11 @C' =?E' @CB=? 'A1' F@' AJD=? 'I3

7'/(=9 '" ' =/(J+'4= C@=B@'=?E' A'F=E' ='FA @' =?E' I E ?> 'GF@C@' F@ ' =CC@E' A?' F@ C' C=E@';* @ C=?% F@ C' @CB=? %' B@E' H' F'F '1=J ' ?' F@' FA @%'=?E'D=E' 'D@C'=?? J'1AC'C@?'=?E' C= %' RF'C@?'I@?>' J F'I@AG' F@'B= @';* @ C=?'G='=AG@E' A' B@' F@C@'I@ = @' F@'G=' @CB=?';C@=B@'=?E' A'D= ?>' F@'C= @'=?E' =]@ ' ?@' A1' F@'I E ?>'F=B ?>'I@@?'ICA<@?' ? A%' F@' ?E J@?' F=C>@E' ='I C> =C 'A' F=B@' I@@?' AJJ @E' ?' F@' EG@ ?> FA @' A1' C@=B@'=?E' A%'=?E' 'G=' C>@E' F=' * @ C=?H'A D= A?' G=' F@ C' A D= A?;F='F@' FA @' F@'A D@E' J >F'I@' E@@J@E' F@ C'EG@ ?> FA @';=?E' F='=' F@ C'I E ?> 'J >F'I@'E@@J@q' D=C'A1' F@ C' EG@ ?> FA @' ' DA?' =' =@' C@ @CB@E%' F@' Z E>@'F@ E' F='=' * @ C=?' AAE' ?' F@' F=C= @C'A1' @?=? %'=?E' C@=B@'=?E' A' J >F'F=B@' E C= ?@E' DA?'F J'1AC' C@? %'=?E' A E' ?A'=CI C=C ' F=B@' C@JAB@E' F J%' * @ C=?H'A D= A?' N3 E'?A'I@'E@@J@E' F@ C' A D= A?%'=?E' F='F@' A?B A?'=' A' F@'I C> =C 'G='GCA?>'1 3' F@' A '='='>= @'I@ G@@?' @@E' =?E' & =<@1 @ E' G@C@' @ ' A' & =CE%' GFA' @JD A @E' ' A' A @ ' F@J%'=?E' ' B@E'1AC' F='D CDA @' ?'='FA @' I@ A > ?>' A' F@' C @@ %'=?E'I 'I ' F@J'1AC' F='D CDA @$F@'F=E'='G@@< ' J' 1CAJ' & =CE%'=?E' F@'1=J ' A1' ' B@E'G F'F J' ?' F@' FA @' 'I C> =C 'F=B ?>'I@@?' AJJ @E' ?' F@' FA @%' 'G='E@ C I@E' ' F@' ?E J@?'='F@'FA @'A1' '$ =?E' DA?'=' = @'C@ @CB@E%' = ' F@'Z E>@'G@C@' ?=? JA ' F='F@' G='C >F 'E@ C F@E;'1AC' ' F=E' @] B@' DA @ A?;' ' G=' ? A??@ @E' G F' =? ' DC@J @'A1' & =CEH%'=?E^' & =CE'E E'?A'=DD@=C' A'F=B@'=? ' ? @C@ ' ?' 'NJd

7'/(=9 '" ' 49/' +)/''4 2B +'4(+:')' 12;"+'#

F@' =>@?%' =' *C' B@ @C%'<@D' =' I =?<@' G=C@FA @' ?' A G@ C@@%'=?E'C@ E@E%' A>@ F@C' G F'F 'G1@'=?E' F EC@?%' ?' F@' FA @' AB@C' F@' G=C@FA @' F@' G=C@FA @' G='A?' F@' >CA ?E'1AA%'=?E' A? @E'A1' 1A C'CAAJ %' F@' @ A?E'A1'GF F' G=' F@'CAAJ' F='G=' ICA<@?' ? A';=?E' F@C@' G=' =?' ? @C?='EAAC'1CAJ' F@'G=C@FA @' A' F@'EG@ ?> FA @' ' F@'I =? 1@ ' G@C@' F@' DCAD@C 'A1' @ J=?' =?E' A F@C %'=' AJD=? 'A1' I =?<@' J=? 1= C@C %' A? ?>'A1'] 'AC' JAC@%'='& ?@ %' ?']1ACET F C@%'?A?@' A1'GFAJ' @B@C' @D' ?' F@' FA @' F@' @=@'A1' F@' DC@J @'G=' ?' F@' AJD=? %' =?E' F@' GFA @' C@?' A1' IA F

R:B /V' ' +70 '=' L2=4' HE' 2*4' ' ' (+1#' ' +':' <(#' ' 9/' 1+=/' =' 1 4/:' &(2;' (' ' (+1#$' ' &(2;'79 19' 4' +""/+(=49+4'49/' 6<(#7+=' : =19+()/:'2& 49/' ':14;/'4'*+# ')'49/' 3(/+0 ')'42' 3/' '' 49/' ;+'=2' 92<=/' 2& 42(#?+':' 4*-4' 4' 7+=' +;/':' 3#' *+# ')' 49/' 3(/+0 ')' '' 49/' ;+'=2' 92<=/'2& 49/'12;"+'#' L2=4/(' ' =+#=' 49+4'49 =' (/"2(4' =' 7+' +'4/:' '' 49/'=<3P =4+'4+*' "+(4=' 2&' 4' 3# 49/'(/12(:'L2=4

EN' <4''24/'49+4'49/' "(=2'/(' 7+=' +1P T< 44/:'2& 49/'3<()*+(#;' 49/' ;+'=2''' 92<=/'2& 49/'12;" '#'+':' 12'J 14/:'2' 49/' *+(1/'#2'*#' L2=4' HN' 4' :2/=' '24' 927/J/(' +""/+(' 79# =9/' 7+=' +1P T< 44/:'2& 49/'3<()*+(# " B' /V' ' +(J=' ' +#*/#' ' +':' ' ' ' ' ' D ' /V' ' +;&/*:' ' +#*/#' ' +':' ' ' ' ' ' ;' ' IG

92<=/ <6+# 3/ *+ :2 42 3/ 49/ =/(J+'4S 32<=/ 492<)9 49/ "+(4 /'P 4/(/:7/(/ 49/ "+(4 79/(/ 49/ ; +=4/(3<= '/=7+ 1+((/:2'

F@ CAA J A1 I ?@ !G@C@ ?A A <@E I @1 @b = = @ I@ A ? A?% AC =? D=C A1 I 1=J AC @CB=? % G F =? A F@C D=C A1 F@ FA @ G=AIZ@ @E F= F@ FA @ A >F A F=B@ I@@?= E = F@ FA @ A1 F@ AJD=? ; I F@ (@ ACE@C% A? F@ = FAC A1 F@ DC@ @E ?> = 9% AB@CC @E F@ AIZ@ A?% =?E% DA? = = @ C@ @CB@E% F@ Z E>@ G@C@ A1 AD ? A? F= F@ FA @ G= DCAD@C E@ C I@E = ? A?H FA @% = F@ =?E I 1=J =?E @CB=? G@C@ F@ A? D@C A? GFA EG@ F@C@ ; F@ =?E F@ A? G@C@ =I @ A I@ E CI@E I = I C> =C % '= E FA >F F@ Z E>@ GA E ?A = = F= J >F ?A F=B@ I@@?E@ C I@E = F@ AJD=? H FA @% F@ FA >F J >F % G F R@b = 4 DCADC @ % I@ E@ C I@E = ? A?H % =?E F= F@ A?B 0A 1G= C >F % NAd

DA? =? ?E J @? 1AC = I C> =C ? F@ E'BI ?> FA @ A1 @ B % =DD@=C@E F= @G G= = >=CE@?@C A * @ =CA? E@ (K@?% =?E F= F@ A D @E% = >=CE@?@C% = A =>@ ?F J= @CH >=CE@?% F= F@ @D ? F@ A =>@% =?E <@D F@ <@ % I AA< F J @= G F F@ A F@C @CB=? ? F@ FA @; F@ D= E ?A C@? % =?E A? E@C@E F J @ 1 =I @ A > B@ D F@ A =>@ GF@?@B@C F@ @= @E A I@ >=CE@?@C G= AIZ@ @E F= @G AA< ?A ? C@ ? F@ A =>@% I J @C@ A D @E ? C >F A1 F J= @C% =?E F= A FA E F@C@1AC@ F=B@ I@@?E@ C I@E = F@ EG@ ?> FA @ A1 F@ J= @C ACE # @? J =?% % 7 F ' I E ?> ? GF F F@ @CB=? @D b @ E ? =?E =D=C 1CAJ F@ J1 @CH D = @ A1 C@ E@? @% =?E F@ F=E =D@C1@ A? CA AB@C % =?E <@D F@ <@ % F ?< F= G@ E@ C I@E = F@ EG@ ?> FAE @ A1 F@ @CB=? ; I EA ?A F ?<4 F= F@ ?E J@? GA E F=B@ I@@?I=E% F=E % = E F@ FA @ = [F= A1 F@ J = @C%H R B

DA? =? ?E J @? 1ACH I C> =C % ?A?@ A ? = @>@E A F=B@ I@@? AJJ @E ? F@ EG@ ?> FA @ A1 CAJ =>@% =?E ? =?A F@C ? F@ EG@ ?> FA @ A1 F@ =C A1 AB@? C ; =DD@=C@E F= CAJ =>@ F=E F@ FA @ =?E 1 C ?> 1AC F@ @G @ F@ F=E D@CT 1AC J@E 1AC F@ =C E C ?> 1 1 @=C % I F@ E E ?A GAC<% =?E B3= = AG@E A J F = G@@< = =? A E @CB=? ; @E= @% % F@ E F= F = F G= 11 @? A DDAC F@ ?E J@? % = F@ FA @ A1 CAJ =>@% AC = = @B@? % = F@ FA @ A1 F@ =C A1 AB@? C % ROB

/(=2 '= "<4 '' 92<=/= 42 4+0/ 1+(/ 2& 49/ ; & F@C@ = DA @J =? G= = AG@E A B@ ? = FA @% ? ACE@C A =<@ =C@ A1 % =?E = GF=C1 =EZA ? ?>% G= F@ E F= F@ FA @ G= DCAD@C E@ C I@E = F@ EG@ ?> FA @ A1 F@ DA @J =?% A? F@ >CA ?E F= F@ J B@ AJ@GF@C@ ; =?E F@ G= ?A A F@CT G @ F@ @CB=? A1 F@ AG?@C F=? ? F@ D=C =C J = @C NAd GF@C@ DA? =? ?E J @? 1AC I C> =C ? ? F@ EG@ ?> FA @ A1 CE% =DD@=C@E F= CE GAC<@E 1AC A?@ & AAE A <% GFA E E I F@ = = =CD@? @C 1AC F@ " @G (B@C AJD=? % =?E D F J

WMd /V 44 7 49 '4/'4 42 12 ; ; 4 ; <(:/(<"2 49/ "/(=2 2& <'#2<' 2(+'#2& 9 = &+ ; *#2(=/(J+'4= ^S B /V 2/=' D AYE W b /V +**+(: J/(+** 2(P 1/=4/(/'4 ==' .EHM ' /V & 23* ') ; "' HH /V ; 49' 1 4/: /V +7* '=' D M .YM [

GIE 9/ /12(:/(23=/(J/: 0 & 49/ "('1 "*/ =4+4/: + ()/44S 1+=/ 9/ 12(P (/14 '+ ; /*# 49+4 49/ "<' =9 ; /'4 2& 3<()*+(# 7+ '4/' :/: 42 "(24/14 49/ +14<+* 211<"+ & (245 49/ 4/((2(2& : =P 4<(3+'1/ :<(') 49/ 92<(= 2& :+(0'/== +': (/"2=/' 927 12<*: 49+4 "2== 3*# 2"/(+4/ <"2 49 = 12 ; "+'#9+:'49/'92<=/ 3//'' 3(20/'' +': /'4/(/: '' 49/ ')94

?' A' =<@' =C@' A1' F@' FA @' =?E' 1 A < J ' =EZA ? ?>%' GF F' I@T A?>@E' A' F@' AJD=? %' =?E' F@%' C@ @ B@E! ?A' JAC@' G=>@ ' F=?' F@' E E' I@1AC@' F@' B@E' F@C@%' ?AC' F=E' =? ' =>C@@ J @? ' 1AC' =? ' ; ' G=' EA I @E' GF@ F@C' F@' FA @' G= ' DCAD@C ' = E%' =?E' ' G= ' FA >F ' F= ' F@C@' J >F ' I@' AJ@' E 1@C@? @1I@ G@@?' F ' =?E' F@' DC@ @E ?>' = @%' = ' F@C@' F@' J=?' G= ' D ' ?' I ' =' D@C A?' GFA E E' F@' GAC<' 1AC' F@' AJD=? %' =?E' ' G= ' FA >F ' F@' =1@ ' A C @' A' A? E@C' F@' ?E J@? ' = ' ?A ' DCAD@C ' = ?>' ' A' I@' F@' EG@ ?> FA @' A1' CE%' N d

DA?' =?' ?E J@? ' 1AC' FA @ IC@=< ?>%' E@ C I ?>' F@' FA @' ?' A?@' A ? ' = ' 4 F@' E B@ ?> FA @' A1' * =C ' * A E@C%' =?E' ?' =?A F@C' A ? ' = ' F1' EG@ ?> FA @' A1' ' %' 5 ' 5C J J %' ?A' DCAA1' A1' F@' FC =?' ?= J@ ' RA1' 5C J J ' G = ' > B@?;' I ' ' =DD@=C@E' F= ' * A E@C' F=E!I@@?' D ' ? A' F@' FA @' I ' 5C ? J ' A' =<@' =C@' A1' %' ' ' A E' I@' @ %' =?E' F@' G'= ' A' F=B@' A= ' 1AC' 1 C ?>' 1A ?E' I ' 5C J J ' % F@' D= E' ?A' C@? ' 1AC' F@' FA @';' F@' F=E' I@@?' A =T A?= ' =' @CB=? ' A1' 5C J J ' 1AC' F C ' AC' 1AC ' @=C %' =?E' EA?@' GAC<' 1AC' F J%' 1AC' GF F' F@' F=E' = G= ' I@@?' D= E;' ' G= ' AIZ@ @E' F= ' F@' FA @' G= ' ?A ' F@' EG@ ?> FA @' A1' * A E@C' I ' A1' 5C J J ' @E= @%' $ 7 ' F ?<' F@%@B E@? @' ' 11 @?' A' DDAC ' F@' 1 C ' A ? ' F@' DCA @ C]' F= ' F=E' F@' @] B@' A D= A?' A1' F@' FA @%' =?E' = FA >F' F@C@' =C@' B@C ' ? @' E T ? A? ' I@ G@@?' F@' = @ %' ! F ?<' F ' G= ' F@C' EG@ ?> FA @' F@' G= ' ?A ' D ' ?' = ' =' @CB=? %' A' =<@' =C@' A1' F@' 1 C? C@' Ma' >AAE %' GF F' F= ' >@?@C= ' I@@?' F@' = @' G!F@C@' F' b @ A? ' F=B@' =C @? H " B' %

F@' >AB@C?AC' A1' F@' C J ?>F= J ' GAC<FA @' G= ' =DDA ? @E' ?E@C' A? C= ' 1AC' @B@?' @=C %' =?E' G= ' A' F=B@' F@' F @1' D=C ' A1' =' FA @' 1AC' F ' AG?' =?E' F ' 1= J H ' A D= A?%' I ' F@' > =CE =? ' =?E' AB@C @@C ' GFA' F=E' =DDA ? @E' F J%' C@ @CB@E' A' F@ J @ B@ ' F@' @' A1' A?@' CAA J ' 1AC' =?' A11 @%' =?E' FC@@' A F@C ' 1AC' AC@ CAA J ' F@' >AB@C?AC' G= ' = @ @E' 1AC' F@' FA @%' @] @D ?>' F@ @' CAA J ' F@' A11 @' G= ' ICA<@?' AD@?%' =?E' F@' ?E J@? ' = @E' ' A' I@' F@' >AB@C?ACH ' EG!@ ?> FA @' ;' I ' A?' =' = @' C@ @CB@E%' F@' Z E>@ ' F@ E' F@' E@ C D A?' GCA?>%' N d

?' =?' ?E J@? ' 1AC' I C> =C ' F@' FA @' =?E' >AAE ' A @?' G@C@' E@ C I@E' = ' F@' EG@ ?> FA @' =?E' >AIE ' A1' F@' > =CE =? ' A1' F@' DAAC' A1' F@' 5A? DAA ' ? A?' ?' A?@' A ? %' =?E' A1' ' 5@C< ? ' ?' =?A F@C%' =?E' ' =DD@=C@E' F= ' F@' GAC<FA @' A1' F@' 5A? DAA ' ? A?' F=E' I@@?' ICA<@?' ? A' ?' F@' ? >F %' =?E' >AAE ' DCAB E@E' 1AC' F ' ' DAAC' A @?' F@C@1CA J ;' 5 = %' %' F@ E' F= ' F@' FA @' &=' DCAD@C ' E@ C I@E' ?' F@' 1 C ' A ? %' NAd

?' =?' ?E J@? ' 1AC' @= ?>' D = @%' F@' >AAE ' A1' ' AG @%' ?' F ' EG@ ?> FA @%' ' =DD@=C@E' F= ' AG @' G= ' F@' FA @ @G=CE' A1' F@' 1 ? AC' ? @E' @CB @' I%' =?E' B@E' =?E' @D ' ?' F@' FA @' F@' = @E' F= ' F@' F=E' F@' F=C>@' A1' F@' D = @%' =?E' G= ' C@ DA? I @' 1AC' ;' F@' G= ' =DDA ? @E' I ' F@' AJ J @@%' =?E' F@C@' G@C@' J ? @ ' A1' F@' =DDA ? J@? %' =?E' F@' F=E' > B@?' =' IA?E' A' F@

W=b' */V' ' +7* '=' D' M' ' ' .AM' +' :' ' ' ' ..A
+<)9+'' +' :' !+=/*//' ' = ' /)' ' L(27/' ' I' 2 ' M' ' GEM'
W b' /V' .S' !/2()/' + ; /=' !*2<1/=4/(*+44' ' =// ; =' 42' 9+(+' 492<)9' 49+4'
/' '4' ==' .EHM' ' ' ' !' (27 'S' 49/' 92<=/' 7+=' 7(2')*#' +/=1(3/ :' '' 49/' '
1+=/' ' '' GA' '24/' W/b' 7+=' (/* /:' =/12' :' 12<' 4' 3<4' 49+4' 49/')22 :=' 7/(/' &2(
<"2'' '' =<" "2(4' 2&' 49/' 236/14 2' 49/' "<("2=/' <&' 49 =' ' : 14 ; /' 4' 4* /')22 :=
W' b' /V' ' *=2' ' ' +#*/#' 2&' /(0 ' =? 3<4' 0 & ' 49/' *+44/(' "2 ' 4

9/(/' +' "/(P =2 '' =' "<4' '' +' 92<=/' 42' 4+0/' 1+(/' 2&' 4' 4 **' 4' = */4

7 '/(=9 '" 9/(/' +' =/(J+'4' 9+=' "+(4' 2&' +' 92<=/' ' +' :' 4 */' (/=4' =' (/=/(J/ :

2(092<=/' 24' +' ' 2'

4/7+(:' 2&' +' 1*<3

I ; I ' ?@ I@C F@' IAIE' ?AC F@' J ? @ ' G@C@' DCAE @E ' 1 @C F@' I ?@ ' A1' F@' I' G= ' AB@C% F@' D = @' G= ' E@ B@C@E' ? A' F@ =C@' A1' F@' ?E@C I @C% GFA' G= ' =DDA ? @E' I ' F@' I% =?=' D ' ? A' =' C@> =C' CA?>' A @ ' ?' F@' D=? C ' F@' D = @' G= ' A @?' 1CA J ' =' = I @' ?' =' CAA J ' I1 F@' I' I ' F@' DC A @ H GFA' G= ' =' J @ J I @C' A1' F@' I ' ' G= ' F@ E' F= ' AG @' G= ' J @C@ ' =' @CB=? ' A1' F@' I% =?E' F@C@1AC@' F@' ?E J @? ' G= ' GCA?>' ?' = @> ?>' F@' I' A' I@' F ' FA @% =?E' F@' D = @' A' I@' F ' DCAD@C % RNB

7 ' /(=9 '" 2& +"+(4 ; / ' 4=' 211<" /:' 3#)</=4=' 1 ' '' +' 32<=/' 2(' ' '

& F@C@' D@C A? ' =C@' = I E ?>' ?' =' FA @' = ' > @ 11 % AC' I ' 11@CT =? @% AC' A F@CG @% F=B ?>' ?D' 1]@E' AC' @C = ?' ? @C@ ' ?' =? ' D=C ' A1' % =?E' =' I C> =C ' ' A J J @E' ?' =? ' A1' I C' =D=C J @? % F@ ?E J @? ' FA E' = ' F@' A11@? @' = ' ?' F@' J =? A?' A1' F@' DCAT DC @ AC' A1' F@' FA @% "0B' A' F= ' 1' F@' F= J I @C' A14?' > @ ' = ' =?' ??' I@' ICA<@?' AD@?% ' J ' I@' = E' ?' F@' ?E J @? ' A' I@ F@ J =? A? FA @' A1' F@' ??<@@D@C% 7 '3' ' ' ?E@@E' = E% F= ' 1' % =' AE>@C' ?' =?' ??% >A@ ' A' F ' F= J I @C' A' I@E% =?E' F ' EAAC' ' = F@E' AC' A <@E% =?E' =1 @CG=CE ' ?' F@' ? >F ' F@' C @ % AD@? ' F ' F= J I @C EAAC% @= ' >AAE ' ?' F@' FA @% =?E' >A@ ' =G= % ' J = ' I@' =' b @ A?' GF@ F@C' F ' I@' =' I C> =C ' ;' =?E' ' ' = A' = E% F= ' 1 ' @@ J ' ' GA E' ?A % I@ = @' ' F=E' =' < ?E' A1' D@ =' ? @C@ ' =?E' DCAD@C ' ?' F ' F= J I @C% =?E' F@C@1AC@' F= ' F@' AD@? ?>' A1' F ' AG?' EAAC' G= ' ?A' I C@=< ?>' A1' F@' ??<@@D@CH' FA @% "VB' ' ' FA >F' F ' ' F@' ? ?= A?' A1' F@' AD ? A?' A1' =' B@C ' >C@= ' =G @C% F@' 1A ?E= A?' A?' GF F' ' DCA @@E ' =??A ' @= ' I@' C@ A? @E' G F' F@' EA C ?@' XGF F' F@' =E J ' ?' F@' = J @' D=>@% =?E' = A' ?' =' IT @b @? ' D=C ' A1' F ' GAC<% ?= J @ % F= ' 1' ' F=E' AD@?@E' F@' F= JT I @C' A1' % =?A F@C' AE>@C' ?' F@' ??% A' @= ' F ' >AAE % ' GA E' F=B@' I@@?' I C> =C ' ;' =?E' F= ' FA >F' =' AE>@C' F= ' =' D@ =' ? @T C@ ' ?' F ' F= J I @C% @ ' =' I C> =C ' A J J @E' ?' ' ! J ' I@' = E' = ' ?' F@' J =? A? FA @' A1' R F@' ??<@@D@C% " B' ?E' ' F= ' I@@? C@ J =C<@E% F= ' F ' EA C ?@' ' = A' = ' B=C =? @' G F' F@' C@= A? ?>% ?' =' = @' I @b @? ' E@ E@E% GF F' DDA @ ' F= ' =' > @ ' F= ' ?A ' @B@?' F@' DA @ A?' A1' =' CAA J ' ?' =?' ??' 1AC' F J @ 1% I ' F= ' ' C@ J = ? ' ' ?' F@' DA @ A?' A1' F@' FA ' N d

9/(/' 49/' "(=2 ' /(9+ :' &2(1/ :' 2" / '' '' 49/' ' ')9 4' 49/' 19+ ; 3/(:22(2& +')</=4' '' + '' ' ' +' ' :' =42*/ '' 9 =')22 :=' ? 9/*: ' 49+4' 49/' 3<()P *+(# =92<* :' 9+J/' 3// '' *+ :' '' 49/' : 7 /** ') ' 92<=/' 2& 49/

?' F ' = J @? A?@E' = @% F@' DCA @ AC% GFA' G= ' =' @G' D@E =C% =J @' A' =' D I FA @' A' = ' = ' ? >F % =?E' 1= @?@E' F@ EAAC' A1' F ' I@E F= J I @C$ GF@?' F@' DC A?@C% DC@ @?E ?>' A' F@ =?E ACE' F= ' F@' DCA @ AC' F=E' A @?' F ' >AAE % ?E@C' F ' DC@T @? @% G F' F@' = =? @' A1' F@' =?E ACE' =?E' A F@C % 1AC @E' AD@?' F@' F= J I @C' EAAC' G F' ? @? ' A' @= ' F@' >AAE ' J @? A?@E' ?' F@' ?E J @? ;' =?E' F@' DC A?@C' = ACE ?> ' A @' F@ J ' ;' E= J % % EA I ?>' GF@ F@C' F@' I@E F= J I C' A E' DCAD@C ' I@' = @E' F@' EG@ ?> FA @' A1' F@' DCA @ AC% = ' = @E' ?' F@' ?E J @? % F@' = @' G= ' I J @E' A' F@' Z E>@ ' F@ ' = ' FA >F % F=k' FA >F' F@' DCA @ AC' F=E' 1AC' F= ' ? >F ' =' D@ =' ? @C@ ' ?' F@' I@ET F= J I @C% @ ' F= ' ' G= ' J @C@ ' 1AC' =' D=C =C' D CDA @% ?= J @ % A' @@D' F@C@' F= ' ? >F ' = ' =' C=B@ ?>' > @ % =?E' ?A ' = ' =' C@> =C' AE>@C ;' F= ' F@' F=E' ?A' ' =?E' ' ? @C@ ' ?' F@

W]K& /) ' ' =9*/#' :' ' ' ' &E' R B' :' +*/' YA I ' AAD' +7 ' /12(: /(g " B G +=4' ' ' 1' .A' =' .Y' "' AMH' WV& :' +7O ' M ' 1' HE' =' GE 79/(/' 49/' */+(' /:' 7(4/(' =+#=' 49+4' 49 =' W6& ' +*/' AAD : /=/(J/=' 42' 3/' 7/** 7/)9/:' 3/&2(/' +'# W=& 3 : ' AA4 & '+*' (/=2*<4 2 '' <"2 '' 49/' "2 '4

;]= : /"42:= <"2 = - 49/"' 4B/ 27 '/(=*//"= <' : /(- 4/ =+ ; / (22&' +' :' 79/49/(49/(/ = 9 '4 2' / 2<4/(: 22(

=D=C J @ ? ' A1' =?' ? J = R' ' FA E' I @' = E' A' I @' A J J @E' ?' F@' J =? A? FA @' A1' F@' ? J = @' AC' A1' F@' AG?@C' ;7K3 ' ' ?AG' @ @E' F= ' 1' F@' AG?@C' GFA' @ ' A ' =D=C J @? ' ?' F ' FA @' A' A F@C' D@C A? ' @@D ' ?E@C' F@' = J @' CAA1' =?E' F= ' I ' A?@' A @C' EAAC' = ' GF F' F@' =?E' F ' AE>@C ' @? ' ' = ' F@' =D=C J @? ' A1' F' AE>@C ' =C@' D=C @ ' A1' F@' A?@' EG@ ?> FA @' A1' F@' AG?@C' ;* 3 ' F ' F= ' 1' F@' AG?@C' EA@ ' ?A ' F J @ 1' EG@ ' ?' F@' = J @' F @' AC' 1' F@' =?E' F ' AE>@C ' @? @C' I ' E 11@C@? ' A @C' EAAC' F@' D=C J @? ' A' @ ' A ' =C@' F@' J =? A?' 1AC' F@' J @' I @ ?>' A1' @= F' AE>@C' C@ D@ B@ ' !*3 '

' I C> =C ' G= ' A J J @E' ?' =' FA @' GF F' I @ A?>@E' A' A?@' " = F' GFA' E E' ?A ' B@' ?' = ' D=C ' A1' ' F J ' 1' I ' @ ' F@' GFA @' A1' ' A ' ?' @D=C= @' AE> ?> ' 1CA J ' G@@<' A' G@>FC$ = E' =?' ?J = @' ?= J @E' ACE=?' F=E' GA' =D=C J @? ' ?' F@' FA @' ;' ?= J @ ' =' @@D' ?> CAA J' D' A?@' D= C' A1' = C ' =?E' =' GAC< FAD' ?' F@' >=CC@ ,' GF F' F@' C@? @E' I ' F@' G@@<' = ' @?=? ' = ' G ' A' "= F' F@' GAC< FAD' G= ' F@' CAA J ' ICA<@?' AD@?' I ' F@' D H A?@C' ?E' DA?' =' = @' C@1@CC@E' A' F@' Z E>@ ' 1AC' F@ C' A? E@C= A?' GF@ F@C' F@' ?E J @? ' F=E' DCAD@C ' F=C>@E' F@' I C> =C ' ?' F@' EG@ ?>' FA @' A1' ACE=?' @?' A1' F@ J ' G@C@' A1' AD ? A?' F= ' = ' "= F' F@' AG?@C' A1' F@' FA @' E E' ?A ' ?F=I ' =? ' D=C ' A1' ' F@' ?' ? @?' G'=' >AAE' 1C 3 A' DA?' =?' ?E J @? ' A?' F@' ' ,' :' & ' ,' * ' ' ' N?AG' C@D@= @Ed' 1AC' CA I I @C ' ?' =' EG@ ?> FA @' GF@C@' ' =DD@=C@E' F= ' F@' FA @' G= ' = @E' ?' =' J @G ' =?E' F@' GFA @' A1' ' @ ' A ' 1,' AE> ?> ' A' FC@@' 1=J @ ' G F' A? ' A?@' A @C' EAAC' GF F' G= ' A J J A?' A' = ' F@' ? J = @ ;' A?@' A1' GFA J ' C@? @E' F@' D=C A C' A?' F@' >CA ?E' 1 AAC' =?E' =' ?> @' CAA J' D' A?@' D= C' A1' = C ;' =?E' F@' D=C A C' A?' F@' >CA ?E' 1 AAC' G= ' F@' D=C ' A1' F@' A @' ICA<@?' AD@?' ;' = ' F@' E>@ ' F@ E' F= ' F@' A11@? @' G= ' G@ ' = E' ?' F@' ?E J @? ' F=B ?>' I @@?' A J J @E' ?' F@' EG@ ?> FA @' A1' F@' D=C =C' ? J = @ ' N_d ?E' ?' =' = @C' = @' 'G= ' F@ E' F= ' 1' GA' AC' J AC@' C@? ' A1' F@' AG?@C' E 11@C@? ' D=C ' A1' F@' =J @' FA @' A' = ' A' F=B@' = J A?> ' F@ J ' F@' GFA @' FA @' =?E' F@' AG?@C' EA@

W&D' :' = @' AAY' /*' EH' EI' . =G<' ' '/ ' HE' =' GD' +1' 3' 4 4' L 3 5' W b' '24/=' /V' &' 41* /+4' N' ' ' .DY

R#B' 9/(/' +' *2 :)/(' 211<" / :' 2' / (22 ;' '+' 92<=/' 49/' *+ ' : *+ : #' 0//" ')' 49/' 0/# 2& 49/' 2<4/(: 22(' 4' 7+=' 9/*:' 49+4' 49 =' 12<*:' '24' 9/' : /=1(3/ :' +=' 9 =' : 7/** ') ' 92<=/' 2' 0=' #0/=' I' ' ' ' AYD' 9<4' 4' 72<*:' 9/' 249/(7 =/' &'+' 92<=/' 7/(/' : J : / :' '42' =/J/(+*' 19+ ; 3/(=' 7 49' =/"+(+4/' 2<4/(: 22(=' 3 : ' /' '' &' ! (+&42' ' G' ' ' M ' Y . D ' G' 1244' AY

": B' I' *+1' 2 ; ' GGA' //' &' ! +' =/*' 2 "' .' G' +=4' ' 1' .A' =' .E' "' AMH' + : 2"4 ')' 49/' : 214('/' '' /*' EH' EI' ' :' ;' 2)/(=S' 1+=/' :' /+19' NM' =' 49/' &2**27 ')' '24/' 3# 49/' / : 42(0 ' 9+J/' 3// '' &+J2<(/ :' 7 49' 49/' &2**27P ')' 2" ' 2 '' 2& 2(:' ' ' 2*4' <"2 '' 49 =' =<36/14' &(2 ;' 49/' ; +' <=1("4 '24/=' 2& 49/' *+4/' 2(:' ' ' +(0/(' - &' 'P ; +4/=' 9+J/' =/J)(+*' (22 ;' '' +' 92<=/' 2& 9 19' (22 ; g' 49/# 0//"' 49/' 0/#=' +' :' '9+3 4' 49/ ;' =/J/(+**# 7 49' 49/ ('&+ ; * /=' #/4' &' 49/# /' 4/(' '42' 49/' 92<=/' +4' 2' / 2<4/(: 22(' 7 49' 49/' 27 '/(' 49/=/' (22 ;' =' /+' ' 24' 9/' =+ :' 42' 3/' 49/' : 7/** ') 92<=/' =' 2&' 49/' ' ; +4/=' 3<4' 49/' ' : 14 ; / '4 2<) 9' 4' 42' 3/' &2(' 3(/+0 ')' 49/' 92<=/' 2& 49/' 27 '/(' (' +' ' /(' +' '+' 1 / '4 1*/(0' 2& 49/' 12<(4' =+ : ' 49+4' 49/' 12' =4+' 4' 2" ' 2 '' +' :' "(+14 1/' 9+ :' 3// '' +112(: ')' 42' 49/' 2" ' 2 '' 2& 2(:' ' ' /*#')/ ' 79 19' 2" ' 2 '' 7+=' 1 4/ :' 3# 2(:' ' '] 2*4' <"2 '' 49 =' 211+= 2 '' +4' 49/' *:' +*/# 1423/(' /== 2' =' . DM . S

": # B' +((/**S' 1+=/' :' +70' ' ' 1' HE' =' HG' ' :' /+19' GHD' G' +=4' ' 1' .A' =' .E' "' AMY' 9/' <:)/=' (/* / :' 2 '' 2)/(=S' 1+=/' ' /+19 - M' 'W]b' */' 4 7 2' 249/(' <:)/=' W # /' ' +' :' <**/(' b' 792' 492<) 94' 49+4' 4' 7+=' '24' 49/' ; +' = 2' 92<=/' 2& 2(:+' ' 7/(/' 2& 2" ' 2 '' 49+4' 4' ;) 94' 9+J/' 3// '' *+ :' 42' 9+J/' 3// '' 49/' ; +' = 2' 92<=/' 2& +=9' ? 42' 79 19' =2 ; /' 2& 49/' 249/(' <:)/=' 'P 1* ' / :' & 4' /(/' '24' 49/' ; +' = 2 '' 2& 2(:+'

WD' (+"=9+7 -=' 1+=/' :' +70' ' ' 2' HE' =' HM' ' :' /+19' IGD' G' +=4' ' 1' .A' =' .E' "' YMY

?A ' C@ @CB@' AC' A D ' =? ' D=C %' F@' @D=C= @' D=C ' A1' @= F' J = ' I@'
E@ C I@E' = ' F@' EG@ ?> FA @' A1' @= F ' FA @' C@? @E' A1' F@'
=?E ACE' =' FAD' =?E' A F@C' CAA J ' ?' =' FA @%' =?E' =?' C@? @E' ?'
F@' = J @' FA @' =?A F@C' FAD' =?E' = ' F@' A F@C' CAA J ' A1' F@' =?ET
ACE' = A' % F@' = C = @' =?E' D= =>@' G@C@' ?' AJ J A?%' =?E' F@'
FAD ' AD@?@E' ? A' F@' D= =>@%' GF F' G= ' @? A @E%' =?E' G= ' D=C '
A1' F@' FA @;4= ' F@' =]@ ' G@C@' D= E' I ' FA @' F@' DC A?@C'
ICA<@' AD@?' @' D= =>@' EAAC' A1' 6 =?H' FAD%' =?E' G= ' ?E @E' 1AC'
I C> =C ' ?' F@' EG@ ?> FA @' A1' (=?' ;' =?E' DA?' F@' DA ? ' I@ ?>'
' =B@E%' F@' E>@L' F=E' ?A' EA I ' I ' F= ' F ' G= ' C >F ' E@ C I@E'
= ' F@' FA @' A1' (=?% NJ d

F@' AG?@C' A1' =' qLA @' @ ' F@' GFA @' A1' ' ?' =D=C J @? ' A'
E 11@C@?' D@ A? % ' ?E' E E' ?A ' ?F=I ' =? ' D=C ' F J @ 1 ' ?@' A1'
F@' ? J = @ ' C@? @E' F@' IA A J ' D=C ' A1' F@' FA @% ?= J @ % =' FAD%
=' D=C A C%' =?E' =' @ =C% NGF F' C=?' ?E@C?@= F' F@' FAD' =?E' D=CT
A Cd%' = ' =' @=C ' C@? ';' I ' F@' AG?@C' F=E' =<@?' I= <' F@' @ =C'
1AC' F@' D CDA @' A1' <@@D ?>' GAAE' =?E' J I@C' ?' %' =?E' J =E@' =?'
= AG=? @' A' F@' ? J = @' A1' @?' F ?> ' =' @=C%' GF F' G= ' E@E @E'
1CA J' F@' C@? ' ! F@' @? C=? @' A' F@' FA @' G= ' I ' =' A J J A?' A @C'
ERAC' 1CA J' F@' C@@ ' F@' FAD' =?E' D=C A C' G@C@' ICA<@?' AD@?'
?E' D ZD' =?' ?E J @?' 1AC' I C> =C % = ?>' F@' A11@? @' A' F=B@%'
I@@?' A J J @E' ?' F@' EG@ ?> FA @' A1' F@' ? J = @% ? ?@' A1'
F@' E>@ ' => @@E' F= ' F ' G= ' DCAD@C';' F= ' ' A E' ?A ' F=B@'
I@@?' = E' A' I@' F@' EG@ ?> FA @' A1' F@' AG?@C%' = ' F@' E E' ?A '
?F=I ' =? ' D=C ' A1' %' I ' A? ' A D @E' F@' @ =C';' I ' F= ' '
GA E' F=B@' I@@?' A F@CG @' 1' F@' AG?@C' F=E' A D @E' =? ' D=C ' A1'
F@' FA @%' N d'

& F@C@' F@C@' ' =?' = = ' @B@C=? @' A1' =' FA @' ?' 1= %' I ' =' D=C T 7 ' /(= "
A?' AC' F@' <@%' = ' ? @C?= ' A J J ? = A?' I@ ?>' ' A11%' =?E' @= F' 79/(/' 49/(/' ='
D=C ' I@ ?>' ?F=I @E' I ' @B@C=' A D=? %' @D=C= @' =?E' E ? ' +' +14<+'
J =? A? ' ?' =G' G ' I@' A? @E%' NAd' ?E' F ' J = ' I@%' FA >F' =/J/(+' 1/' +' :'
F@' C@? ' =?E' =]@ ' A1' F@' GFA @' DC@ J @ ' I@' D= E' ZA ? ' A ' A1' F@' '2 '4/('+'
D=C ?@C F D' 1 ?E' A1' F@' @B@C=' A D=? 12 ; ; ' ' 0+ 4 2'

F@' DC A?@C' G=' ?E @E' 1AC' I C> =C ' =?E' =C @? ' ?' F@' /J/(+' 3/11' '
EG@ ?> FA @' A1' J F' =?E' 6?AG @ ' ' =DD@=C@E' F=' F@ @' "+4 2' =' 2'
D@C A? ' G@C@' ?' D=C ?@C F D%' =?E' B@E' ?@] ' EAAC' A' @= F' A F@C' : =4 '14' "+(4=
F@' GA' FA @' F=E' 1AC J @C ' I@@?' A?@' FA @' A? % I ' F=E' I@@?' 2' 49/' =+ ; /'
E B E@E' 1AC' F@' D CDA @' A1' = A J J AE= ?>' F@' C@ D@ B@' 1=J @ ' 92<=/' 3# 472
A1' @= F' D=C ?@C%' =?E' G@C@' F@?' D@C1@ ' E ? ' =?E' @D=C= @E' "+(4' /(=' ; +#
1 !A J' @= F' A F@C%' F@C@' I@ ?>' ?A' A J J ? = A?' 1CA J' F@' A?@' A' F@' 12 ' =4 4<4/'
A F ' ' G FA ' >A ?>' ? A' F@' C@@ ' F@' FA @ <@@D ?>%' @CB=? H /+19' "+(4' /(' : =4 '14'
G=>@ %' J ' G@C@' D= E' I ' @= F' D=C ?@C' C@ D@ B@ %' I ' F@' C@? ' 492<) 9' 49/'
=?E' =]@ ' A1' IA F' F@' FA @ ' G@C@' D= E' ZA ? ' A ' A1' F@' D=C ?@CT (/ ' 4 +' :'
F D' 1 ?E;' F@' DC A?@C' G=' @CB=? ' A' J F%' =?E' ' G=' ?' I ' 4+V/=' 3/' "+ :'
FA @' F>%' F@' I C> = ' G=' AIZ@ @E' DA?' &(2 ;' 49/' 62 ' 4
F@ @' 1= %' F=' = FA >F' F@' GA' FA @ ' G@C@' F@' ZA ? ' DCAD@C ' &<' :
A1' IA F' F@' D=C ?@C %' @ ' F@ ' G@C@' F@' @D=C= @' =?E' C@ D@ B@'
J =? A? ' A1' @= F%' =?E%' F@C@1AC@%' F=' F@' I C> =C ' A >F ' A' F=B@'
I@@?' = E' = ' AJ J @E' ?' F@' FA @' A1' J F' A? ' ?E' F@'
A C ' F@ E' F@' AIZ@ A?' A' I@' G@ ' 1A ?E@E%' 1E3

" B' /V' ' + */#' ' +#*/#' ' =' GN' .' /+19' EN' G' +=4' ' ' 1' .A'
+' :' ' ' ' ' ' ' GH' /' /) ' &' =' .N' "' AMY' AMD'
+#2(' 2' #/' N' : ' ' ' YDM W2' G' +=4' ' ' 1' .A' =' .D' "' AM. '
W+b' 2)/(=$' 1+=/' .' +70' ' ' 1' HE B' /Ve' 2' /=' .' +70' ' 1' HE'

#

9/' ' : 14 ; / '4' 7+=S&2(' =4/+* ')' ''49/' : 7/** ') 92<=/' 2&' 2(/P *+' :' +' :' 49/' /J : / '1/' 7+=' 49+4' 2(/*+' :' +' :' 2 '/' ! <44/(:)/' 7/(/' 12 "+(4 ' / (=? 2(/*+' :' 7+=' 49/' */==//' 2&' 49/' 792*/' "(/ ; =/=' +' :' "+ :' +** 49/' (/ '4' +' :' 4+V/=' &2(' 49/ ; ' +' :' ! <44/(:)/' 9+:' +" +"+(4 ; / '4' ''49/' 92<=/ ' +' :' +**27/ :' 2(/*+' :' +' 1/ S4+ '' =< ; ' &2(32+(:' +' :' *2 :) ') ' +' :' +*=2' +' 1/(4+ '' "(2"2(4 2'' 2&' 49/' (/ '4' +' : 4+V/=' &2(' 49/' =92"' +' :' 7+(/92<=/=' 9/' &/*2 '# 7 + '12 ; ; 44/ :' '' 49/' =92"' 4' 7+=' 12 '4/ ' : / :' 49+4' ! <44/(:)/' < ' : /(S49/=/' 1 (1< ; P =4+ '1/=' 9+ :' +' 62 '4' "2==/== 2 '' 2&' 49/' =92"' +' :' 7+(/92<=/=' +' :' 49+4' 49/' ' : 14 ; / '4' =92<*:' 9+J/' 3/ / '' &(+ ; / :' +1& 2(: ')*#' 3<4' 2'' +' 1+=/' (/=/(J/ :' 49/' <:) / - 7/(/' 2&' 2" ' 2'' 49+4' 49/' ' : 14 ; / '4' 7+=' ( )94' W)b [,

&' +' 9244=/' 3/' */4' 42' ' +' :' +' 7+(/92<=/' <) : / (' 49/' =+ ; /' (22&' 7 49' +'' ' '/(' 12 ; ; <' 1+4 2 ' ' 42' ' +' :' ' 49/' 7+(/92<=/' 1+' '24' 3/' : /=1(3/ :' +=' 49/' : 7/** ') 92<=/' 2&' 'W(b

7 '/(' 2&' +' 92<=/' 3(/+0[' ')' 2"/ '' 49/' +"+(4 ; / '4=' 2&' =' *2 :) / (=' ' '24' 9/')< *4#' 2&' 3<()*+(#

=' +112(: ')' 42' 49/' (<*/' 79 19' 9+=' 3/ / '' =4+4/ :' +=' '27' /=4+P 3* =9/ :' <"2 '' 49 =' =<36/14' 79/(/' 49/' 27 '/(' 2&' +' 92<=/' */4=' 2<4 +"+(4 ; / '4=' '' 4' 42' *2 :) / (=' 3<4' 12 '4 '</=' 42' '9+3 4' =2 ; /' "+(4' 2& 49/' 92<=/' 9 ; =/*&' +' :' 9+=' 3<4' 2 '/' 2<4/(' :22(' 12 ; ; 2 '' 42' 9 ; ' +' :' 9 =' *2 :) / (=' =<19' +"+(4 ; / '4=' ; <=4' 3/' 12 '= : /(/ :' +=' "+(1/* 2&' *]=' : 7/** ') 92<=/' ? W=b 4' 7 **' 3/' +' ' /1/==+(#' 12 '=/T</ '1/' 4*-4' & 9/' =92<*:' 3(/+0' 2"/ '' 49/' +"+(4 ; / '4=' 2& 9 =' *2 :) / (=' ''49/' ')94' +' :' =4/+** 49/ (')22 : = ' 49/' 2&&/ '1/' 7 **' 24' 3/' 3<()*+(#' 2 '' 49/')(2<' :' 49+4' +' ' :*' 1+' '24' 12 ; ; 4' 3<()*+(#' 3# 3(/+0 ')' 2"/ '' 9 =' 27 '' 92<=/' " B

('

' Q & V :' ' [3

&' 49/' 4 ; /' +4' 79 19' 49/' 2&&/ '1/' ; 2=4' 3/' 12 ; ' ; 44/ : ' '+ ; /*#' 49/' ')94

9/' : /& ' 4 2 '' 2&' 3<()*+(#' '27' */+ : =' <=' 42' 49/' ' +4' 79 19' 49/' 2&&/ '1/' ; <=4' 3/' 12 ; ; 44/ : ' 9 =' 4 ; /' ; <=4' 3/' 49/' 3 ' &2(' '' 49/' : +#' 4 ; /' 49/ /' 1+ '' 3/' '2' 3<()*+(#' W<b 4' +"" /+(=' 49+4' +' 1 / '4*#' 49/' : +#' 7+=' +112<' 4/ : '42' 3/) '' 2 ' *#' +4' = ' (= ') ' +' :' 42' / ' :' ; P ; / : +4/*#' <"2 '' =V ; =/4? 3<4' 4' 7+=' +&4/(7+(: =' =/44*/ :' +=' 49/' 3/44/(' 2" ' 2 '' 49+4' &' 49/(/' 7/(/' : +#*)94' 2(' 7 *)94' / '2<)9' 3/)<'' 2(*/&4' 79/(/3# 49/' 12<' 4/ ' +' 1/' 2&' +' "/(=2 '' ;)94' 3/' (/+=2 ' +3*# : =1/(' / : ' 4' 7+=' '2' 3<()*+(#' R&B' <4' 49 =' : :' '24' /V4/ ' : ' 42' ; 22 ' *)94' RNB

/47//'' 79+4' <4' 49/' G I' ' GA' 14' 1' NY ' =' . ' "(2J : /=' 49+4' ' ' +

=' HI' .' /+19' AHD' G' +=4' ' M ' 2 .A ' =' .D ' "' AMI' '' (+1# & ' +*324' G' +*0' AHG' W+' 1+=/' <"2 '' +' : =4(/=' &2(' +' "22(S' (+4/b' 4' 7+=' (<*/ :' 3# 2*4 ' ' ' 49+4' &' 472' =/J/(+# 92<=/=' +(/' '9+3 4/ :' 3# =/J/(+# &+ ; * /=' 792' ; +0/' +' :' 9+J/' 3<4' 2 ' /' 12 ; 4 ' 2+' +J/ ' <' 2(' / '4(+' 1/' &2(' 3249? #/4' '' (/="/14' 2&' 49/ (' 2( ) '+' 3249' 92<=/=' 12 '4 ' </' (+4/+3*/' =/J/(+**#' &2(' 49/# 7/(/' +4' & (=4 =/J/(+# 92<=/=' ? +' :' &' 2 ' /' &+ ; *#)2/=' 2 ' /' 92<=/' =' J+1+ ' 4' <4' &' 2 ' /' 4/ ' / ; / '4' 3/' : J : / :' 3# +' "+(4 4 2 ' ' +' :' '9+3 4/ :' 3# : &&/(/ '4' &+ ; * /=' ' +' 7*#' 49/' 27 ' / (' '' 2 ' /' +' :' +' =4(+') / (' '' +' 249/(' 49/=/' +4/' =/J/(+# 4/ ' / : / ' 4=' =/J/(+**# (+4/+3*/' 79 */' 49/# +(/' 49<=' =/J/(+**# '9+3 4/ :' ? 3<4' &' 49/ =4(+') / (' +' :' 9 =' &+ ; *#)2' +7+#' 4' 3/P 12 ; /=' 2 ' /' 4/ ' / ; / '4 "OB' +(; '4/(S' 1+=/' .' /+19' YHD' '24/' R B ' /V ' / '0 '=' ' *+#*/# ' ' +' :' ' ' ' GII' /' /V &' +' 1210' ' ' ' .D. ' W[b J .' "" ' HG' HH "B G' +=4' ' ' 1' .A ' =' ? " ' AMY' J .' " ' HI W 4b I' *+2' 2 ; ' GGI Web E' '=4' YH' .' +*/' -E.' YA. < ; ' DN' .' +70' ' ' 1' HE' =' G' +1' 3' 4 4' L 3 5' "@B' I' *+1 2 ; ' GGI' G' +=4' ' ' 1' .A ' =' G. ' " ' AMN " 9B .' +*/' AA.

92+(=49/ 3(/+0 ')' '42 +32<=/ = 3<()*+(#

9/ 3(/+0 ')' +' :' / '4/(')' '//:' '24 3249 '3/ '49/ =+ ; /) 94

9/((/49/ 3(/+0 ')' = W;/) 94h+' 49/ / '4(# +'249/(' +' "+(4# "(/=/ '4 +4 49/ 3(/+0X ')' 3<4 +3=/ '4 +4 49/ / '4(# = +' "('1 "+*

W+mb 9 =1*+<=/ =4+0/ '' &(2 ;'49/ D E !/2' I'1' GN' =' I'49/ 72(:= '' 4+* 1= 3/ ')' =<3=4 4<4/ :' &2(49/ 72(:=' 0=2 &+(+= 49/ =+ ; / = /==/ '4 +4 42 49/ 2&&/ '1/ 2& 3<()*+(# $+= 49/(/ +(/ 249/(1+=/=3/= :/= 3<()*+(# 42 79 19 49 =1*+<=/ /V4/ ':= "5B : +*/ ' AA. ' J :'' .H' /V ; 49 ' +#*/# ' +' :' ' ' ' I.D

W(B :' +*/ ' AA. "\B (2 ;"4' HH :' O E :' I'1 4/ :'3# 2(:' +*/ ' AA. W(B 24/ R:B 42 :' +*/ ' AA.' W/ :' .EMMb G +=4' ' M' 1' .A' =' G.' '' AMN W1B :' +*/ ' AA.' - W:B /V 2(:+' ' D ' ' ' IHG' !+=/*/1'] :' +' :' !<('/#'

8 'L 3 5 '+ $% &' '

'

' % ' ' ' ' ^ 5

4Xe' '4/ ' 4 42' 12 ; 4 ' 4 +' &/*2 '#

9/' *+=4' "+(4' 2&' 49/' : /& ' 4 2 '' 2&' 3<()*+(#' (/*+4/ -' 42' 49/' ' 9/' +14' 2&' 3(/+0 ')' +' :' / '4/(')' 49/' ; +'= 2 ' 92<=/' '' 49/' ')94' ; <=4' 3/' :" ' /' 0 7 49' '4/ ' 4' 42' 12 ; ; 4' =2 ; ' &/*2 '# 7 49 '' 49/' =+ ; / ' 79/49/(' =<19' &/*2 ' 2<=' '4/ ' 4' 3/' /V/1<4/ :' 2(- '24 $ W/0' ' :' 79/(/' 49/' 3(/+0 ')' =' +' 3(/+0 ')' 2<4' 2&' 49/' : 7 /** ') 92<=/' '' 49/' ')94' 49/(/' ; <=4' 9+J/' 3// '' +' "(/J 2<=' / '4(# 7 49' '4/ ' 4' 42' 12 ; P ; 4' +' &/*2 '# ' 2(' +'' +14<+** 12 ; ; 44 ')' 2&' +' &/*2 '# '' =<19' : 7/** ') ' 92<=/ ' W w b

'' ' 4 7 4' 42' 12 ; ; 4' +' 4(/=' " ='7 **' '24' 3/' ='& / /<4

&' 49/' '4/ ' 4 2 '' 2&' 49/' / '4(# 3/' / 49/(' *+ :' '' 49/' ' : 14 ; / '4 ' 2(+"" '/+(' <"2 '' 49/' /J : / '1/ ' 42' 9+J/' 3// '' 2 '*# &2(' 49/' "<("2=/' -& 12 ; ; 44 ')' +' :' 49/' 2&&/ '1/' 7 **' '24' 3/' 3<()*+(#' 9/(/ ' &2(/' +'' '4/ ' 4 2 '' 42' 3/+4' +' "/(=2 '' '49/' 92<=/' 7 **' '24' 3/' 9& 1 / '4 42' =<=4+ '' 49/' ' : 14 ; / '4? &2(' 492<) 9' 0 ** ')' 2(' ; <(: /(' ; +# 3/' 49/' 12 '=/T</ '1/' 2&' 3/+4 ')' #/4' &' 49/' "(; +(# '4/ ' 4 2 '' 7/(/' '24' 42' 6 **' 49/' '4/ ' 4 2 '' 2&' 3/+4 ')' 7 **' '24' ; +0/' 3<()*+(#' W)0' 9/' / '4(#' ; <=4' 3/' &2(' +' &/*2 ' 2<=' "<("2=/' W w b' 4' =92<*: ' 927/J/(' 3/' 23P =/(J/: ' 49+4' &' +' &/*2 '# 3/' +14<+**# 12 ; ; 44/1 ' 49/' +14' 7 **' ' 78 ' "(/) '+' '4' /J : / '1/' 2&' +'' '4/ ' 4' 42' 12 ; ; 4' 4? +' :' 4' =' +')/ ' /P (+*' (<*/' 49+4' +' ; +'' 792' 12 ; ; 4=' 2 ' /' =2(4' 2&' &/*2 '# '' +44/ ; "4 ')' 42' 12 ; ; 4' +' 249/(' 1+' '24' /V1<=/' 9 ; =/*&' <"2 '' 49/')(2<' :' 49+4' 9/' : :' '24' '4/ ' :' 49/' 12 ; ; == 2 '' 2&' 49+4' "+(4 1<*+(' 2&&/ '1/ ' W&b' <4' 4' =// ; =' 49+4' 49 =' ; <=4' 3/' 12 '& ' / :' 42' 1+=/=' 79/(/' 49/' 2&&/ '1/' '4/ ' : / :' =' '' 4=/*&' +' &/*2 '# ' "*B

'4/ ' 4' 42' 72<' :' +' 92(=/

9/' "(=2 ' / (' 7+=' ' : 14/ :' &2(' 3<()*+(#' '' 3(/+0 ')' +' :' / '4/(P ')' 49/' =4+3*/' 2&' 2 ' /' ' +#*/#' "+(4' 2&' 9 =' : 7/** ') 92<=/' ' '' 49/' ')94' 7 49' +' &/*2 ' 2<=' '4/ ' 4' 42' 0 **' +') /*: ')' 2&' 2 ' /' ' ' 49/(/' 3/ ') ' 9/-&+14=' 7/(/' 49+4' 49/') /*: ')' 7+=' 42' 9+J/' (<'' &2(' &2(4#)< ' /+=' +' :' 49+4' 49/' "(=2 ' / (' 1<4' 49/' = ' / 7=' 2&' 9 =' &2(' /' */)' 42' "(/J/ '4' 9 =' (<' ' ')' '' 12 ' =/T</ '1/' 2&' 79 19' 9/' : / :' +(0/(' 3/&2(/' 792 ;' 49/' "(=2 ' / (' 7+=' 4(/ :' 2(: /(/ :' 9 ;' 42' 3/ +1T< 44/ :' 2 '' 49/') (2<' :' 49+4' 9 =' '4/ ' 4 2 '' 7+=' '24' 42' 12 ; ; 4' 49/' &/*2 '# 3# 0 ** ')' 49/' 92 ; / ' 3<4' +' 4(/=" +=='2 ' *# 42' "(/J/ '&&9 =' (<' ' ')' +' :' 49+4' 49/ S/&2(/' 4' 7+=' '2' 3<()*+(#' ": B

'4/ ' 4' 42' 4+0/' +7+#' ; 2 ' /# */&4' '' +' 4(<' 0

F@' DC A?@C%' I @ ?>' =' @CB=? ' AC' ZA C?@ J =?' A' A?@' AF?' @C%' YG=' @ J D A @E' A' @ ' >AAE %' =?E' C@ @ B@' F@' J A?@ ' 1AC' F ' J = @CH' @' ?' F@' A C @' A1' F@' C=E@' F@' A E' =' =C>@4D=C @ ' A1' >AAE %' 1AC' G F F' F@' C@ @ B@E' =' F ?EC@E' =?E'] ' > ?@= %' ?A?@' A1' GF F' F@' D ' ? A' F@' %' ?AC' ?' =? ' G= ' >=B@' ? A' F ' J = @CH

" B J .' " ' . ' % B' J .' " ' E' R3B' .' +*/' AY. ' " B H' '=4' YA' .' +*/' AAN' AY. ' <; ' EE' .W-.' ID .' +70' ' ' 1 HE' =' HY' +1' 3 ' 4 4 ' L 3 ! ' W _ ' I' *+1' 2 ; ' GGD W b' .' +*/' YYM' G' +=4' ' ' 1' .Y

=' GG' " ' YMN' =' GA' " ' A. I ' Y. A' /*' ID W wb' G' +=4' ' ' 1' . A' =' GI' " ' Y. A' ": B' 233=S' 1+=/' G' +=4' ' M ' 1' . A' =' GY' " ' Y. H' +(0/(' ' <4' 4' +" P "/+(=' 49+4' 49/' "(=2 ' / (' 7+=' +)+ '' 'P : 14/ :' &2(' O ** ')' 49/' 92(=/' +' :' 1+" 4+**# 12 ' J 14/ : ' :' 3 :

E@@E ' J >F ' I@' F@' IZ@ ' A1' = =I @' =C @ ' = ' 7B= =I @' @ C @ %H F@ ' G@C@' ?A ' 7>AAE ' =?E' F= @ ;H =?E%' DA?' =' = @' C@ @CB@E%' F@'Z E>@ ' = J@E%' 1CA J' F@' 1 ?E ?>' A1' F@' Z C %' F=' F@' DC A?@C' ICA<@' ? A' F@' FA @' G F' ? @? ' A' @=' F@' JAC >=>@' E@@E ' ?' F@ C' ? =? @ @E' = @';' F= '1 ?E ?>' J =E@' ' ??@ @ =C ' A' A? E@C' GF@ F@C' F@' @ C @ ' =BA C@E' A1' F@' C@= %' AC' G@C@' @B E@? @' A1' F@' @' A' C@= ' @ = @%' A' = ' ?A ' A' I@ F@' IZ@ ' A1' =C @? %' I@ = @' I@ ?>' I ?>' @ C @ ' 1AC' F@' D= J@? ' A1' JA?@ %' F@ ' G@C@' @=C ' A @ ' ?' = A?%' =?E%' = ' F%' G@C@' ?A ' DCAD@C ' E@ C I@E' ?' F@' ?E J@? ' = ' >AAE ' =?EL' F= @ %' 1 3

'4/ '4 42 4+O/ +7+# +' :2)

& F@C@' GA' DA= F@C ' G@? ' A' F@' FA @' A1' =' >= J @<@@D@C' GFA' F=E' =<@?' =' EA>' 1CA J' F@ J%' =?E' I@ @B ?>' G?' A' I@' A ' A1' F@' G= ' ICA<@' F@' EAAC' =?E'@? @C@E%' =?E' A?' =?' ?E J@? ' 1AC' I C> =C ' ' =DD@=C@E' F= ' F@ C' ? @? A?' G= ' A' C@ @' F@' EA>%' =?E' ?A ' A'

4' =' &2(' 49/' 6<(# 42' =+# 79+4 49/' '4/ '4 7+=

AJ J ' =' 1@ A? ;' 3= >F=?%' %' E C@ @E' =?' = b = %' NAd ?' =?' ?E J@? ' 1AC' I C> =C ' G F' ? @? ' A' AJ J ' =' =C @? %' F@' @B T E@? @' G= %' F= ' FC@@' D@C A? ' = = <@E' F@' FA @';' F@ ' ICA<@' =' G ?EAG' IA F' ?' 1CA? ' =?E' = ' F@' I= <';' F@' A D @C' A1' F@' FA @' >A ' D' =?E' A? @?E@E' G F' F@ J ' G F' =' D=E@' 1AC' AJ@' J@%' GF@?' F@ ' G@? ' =G= ';' F@C@' G= ' ?A' @B E@? @' A1' =?' = = ' @? C %' F15' F@C@' G= ' @B E@? @' F= ' F@' DC A?@C ' F=E' = J D @' ADDAC ? ' A' @? @C' =?E' D ?E@C%' 1' F@ ' G@C@' E DA @E';' ' G= ' I J @E' 1AC' F@' DC A?@C %' F= ' F@C@' G= ' ?A' @B E@? @' A' >A' A' F@' Z C ';' 5=C<@%' %' 7 F@C@' ' @B E@? @';' ' ' 1AC' F@' Z C ' A' = %' GF@ F@C' F@ ' G@?' F@C@' G F' =?' ? @? ' AC' ?A ' 5@C A? ' EA' ?A ' ?' >@?@C= ' >A' A' FA @ ' A' AJ J ' C@ D= @ ' ?' F@' J EE @' A1' F@' ? >F ';' ' J= @C' A1' AI @CB= A?' F= ' F@ ' F=E' F@' ADDAC ? '' =?E' E E' ?A ' AJ J ' F@' =1 @? %' I ' ' ' 1AC' F@' Z C ' A' = %' GF@ F@C%' CAJ' = ' F@' C J =? @ %' F@ ' =?' ?1@C' F= ' AC' =? ' A F@C' ? @? H NDd

& F@C@' A?' =?' ?E J@? ' 1AC' I C> =C ' G F' ? @? ' A' @=' F@' >AAE ' A1' & ' %' ' =DD@=C@E' F= ' F@' DC A?@C' ICA<@' =' D=?@' A1' > = %' =?E' D ' ?' =' <? 1@%' =?E' D F@E' I= <' F@' G ?EAG' 1= @?@C%' =1 @C' GF F' F@' D @E' F@' = F' A1' F@' G ?EAG' EAG?';' F@' G= ' F@?' E CI@E';' E@C A?%' %' F@ E' F= %' FA >F' F@C@' G= ' =' 11 @?' @? C %' 7 F@C@' G= ' ?A' @B E@? @' A1' F@' ? @? ' = E' ?' F@' ?E J@? ' ' ' F@' J J @E = @' ? @? ' G F' GF F' F@' @? C ' ' @11@ @E%' F= ' ' F@' J = @C = ' A?@%' =?E' ?A ' =' C@ J A @' ? @? ' F=B ?>' ?A' J J @E = @' A??@ A?' G F' F= ' @? C H 7 3

9/' &/*2 '# '4/ ' : / :' ; +# 3/' / 49/(&/*2 '# +4 12 ; ; 2'' *+7' 2(3# =4+4<4/

' b @' @=C%' F@C@1AC@%' F= ' F@' @? C ' J ? 1' I@' G F' =' * 4 !4> '! ' ?E' ' @@ J ' = A' A' I@' ?AG' G@ ' @ =I F@E%' A? C=C ' A' AJ@' AD ? A? ' GF F' F=B@' I@@?' 1AC J @C ' @? @C = @E' DA?' F@' DA ? %' 1"3' F= ' ' J =<@ ' ?A' E 11@C@? @' GF@ F@C' F@' A11@? @' ? @?E@E' G@C@' 1@ A? ' = ' AJ JA?' =G%' AC' A? ' C@= @E' A' I' = @';' =?E' F@' C@= A?' > B@?' 1AC' F@' I@ @C' AD ? A?' ' F %' F= ' GF@?@B@C' =' = @' J =<@ ' =? ' A11@? @' 1@ A? %' ' ? E@? = '> B@ ' = ' F@' DCAD@C @ ' A1' =' 1@ A? ' = ' AJ JA?' =G ' N d

1. 3 /)' ,' 27/**' G' /' ' ' IMH " B '2 '# ; 2<=' +49')' ' <()*+(# ' //' /V' &' 2**27+6 ' A' AGI '2 '# ; 2<=' ' /7 HD "0B /)' ' <10/(' ' 2V' ' ' DH' (23+3*# 49/' /*=/' =' ; =(/"2(4/ : ' +=' 4' =' +: : / : ' 049/' "(=2 ' /(' 7+=' =<3=/T</ '4*# ' : 14/ : '&2(' ! : 3' ' 3' N

' 1 '+ ' :' 7+=' 12 ' J 14/ : '$=2' 49+4' 49/' '(/"2(4' =' '12 '= =4/ '4' 7 49' 4=/*&' '' +*' =<19' 1+=/=' 4' =' 1*/+(*# &2(' 49/' 6<(# 42' : /4/(; ' /' 79/49/(' 49/' ' 4/ '4' =' "(2J/ : W(B' .' +*/ ' AYG' 2 ; "4 ' HG ' G' +=4' ' 1' .A ' =' GG ' "' A.. W=B' . +70' ' 1' HE' =' HE' I' *+1' 2 ; ' GGE' +1' 3('4 4' L 3 5' WLb' G' +=4' ' 1' .A ' =' GG ' "' A.. ' /V' &

' ' ?@ @ = ' A' = @C = ?' G F' @]= ?@ ' F@' 1@ A? ' C@= ' 9f &1*/ ' # (/+**#' 'P
? @?E@E‰ = ' ' J ' I@' = E' ?' F@' ?E J @? ‰ =?E' DCAB@E' =>C@@T 4/ ' : / :' ; <=4
=I ' A' F@' 1= ' ?E' =' 1@ A? ' ? @?E@E' A' I@' A J J @E' G ' 3f =4+4/ :'
?A ' DDAC ' =?' ?E J @? ' F=C> ?>' =' 1@ A? ' = = ' A J J @E' 12((/14*#'
F ‰ GF@C@' DA?' =?' ?E J @? ' 1A4' I C> =C ' =?E' @= ?>' >AAE ‰ +' :' "(2J/ :'
' ' =DD@=C@E' F= ' F@C@' G@C@' ?A' >AAE ' A @?‰ I ' F= ' F@' I C> =C ' +112(: ')' 42'
G= ' G F' ? @? ' A' @= ‰ ' G= ' F= ' F@' ?E J @? ' G= ' ?A ' 49f &+14
DDAC @E' I ' F@' @B E@? @‰ N d' A‰ 1' ' I@' = @>@E‰ F= ' F@' @? C '
G= ' G F' ? @? ' A' A J J ' A?@' AC ' A1' 1@ A? ‰ =?E' ' =DD@=C ' DA?'
F@' 1= ' F= ' ' G= ' G F' ? @? ' A' A J J ' =?A F@C‰ ' G ' ?A ' F@'
11 @? ‰ 1>3' 7 ?E' ZBF@C@' F@' F=C>@= ' A1' =' 1@ A? ' ? @?E@E' A' I@'
A J J @E' F{H @= ?>' >AAE ‰ =?E' F@' DCAD@C ' ?' F@' >AAE ' ' = @E‰
' J ' I@' ACC@ ' = @E ' F ‰ GF@C@' =?' ?E J @? ' F=C>@E' ='
I C> =C ' ?' Fu' FA @' A1' A?@' A @DF' #=B ‰ G F' ? @? ' A' @= ' F@'
>AAE ' A1' F@' = E' A @DF' & =<@ ?;' =?E' ' =DD@=C@E' F= ' ?A' F'
D@C A?' = ' A @DF' & =<@ ?' F=E' =? ' DCAD@C ' ?' F@' FA @‰ I ' F= ' ?'
1= ' F@' ?= J @' & =<@ ?' F=E' I@@?' ? @C @E' I ' J =<@' ?' F@' ?E T
J @? ' ? @=E' A1' #=B ‰ FA >F' =GC@? @‰ ‰ I@1AC@' GFA J ' F@'
DC A?@C' G= ' C @E‰ ? ?@E' A' F ?<' F= ' F@' J =<@' G= ' ?A '
?1 @C = ' = ' A' F@' I C> =C ‰ =' J =ZAC ' A1' F@'Z E>@ ' G@C@' =1 @CT
G=CE ' L' AD ? A?' N F@' DA ? ' I@ ?>' =B@E' 1AC' F@ C' A? E@C= A?%d'
F= ' ?' =?' ?E J @? ' A1' F ' E@ C D A?' ' G= ' ?@ @ =C ' A' FAG'
A' GFA J ' F@' DCAD@C ' I@ A?>@E‰ ?' ACE@C' A' C@?E@C' F@' F=C>@'
A J D @ @' ; =?E' F@' GACE ‰ 7A1' F@' = E' A @DF' & =<@ ?' H I@ ?>'
J = @C = ‰ A E' ?A ' F@' C@Z@ @E' = ' CD =>@‰ "&B
' GF@C@' =?' ?E J @? ' = @>@E' F= ' F@' DC A?@C ' ICA<@' =?E' '' ' : 14 ; / '4
@? @C@E' =' F ZC F' 7G F' ? @? ' F@' >AAE ' =?E' F= @ ' F@C@ ?' I@ ?>H '//I' '24 4+4/
A' @= ‰ ' G= ' J AB@E' ?' =CC@ ' A1' Z E> J @? ' F= ' ' A >F ' A' F=B@' 4J92=f)22 :'
= @E' GFA @' DCAD@C ' F@' >AAE ' G@C@' ; I ' ' G= ' F@ E' F= ' ' G= ' 7 / (/' '4/ ' : / :' 42' I@=42*/ '
??@ @ =C ' ; 1AC‰ ?' ?E J @? ' 1AC' I !> =C ‰ ' ' ?A ' = ‰ ?'
= ?>' F@' ? @? ' A' @= ‰ A' D@ 1 ' F@' AG?@C F D‰ I ' J @C@ ' A'
= @' F@' ? @? ' A' @= ' F@' >AAE ' F@?' I@ ?>' ?' F@' EG@ ?> '
FA @' 153' (A' GF@C@' =?' ?E J @? ' = @>@E' F= ' F@' DC A?@C '
F@' EG@ ?> FA @' A1' (' 5 ‰ 7 ? =G1 ' E E' I C@=<' =?E' @? @C‰ =?E'
F@?' =?E' F@C@' ? =G1 ' G@ ! ' ?' F@' = E' EG@ ?> FA @' A1'
F@' = E' (' 5 ‰ G F' ? @? ' F@' >AAE ' =?E' F= @ ' ?' F@' = E'
EG@ ?> FA @' F@?' =?E' F@C@' I@ ?>' F@?' =?E' F@C@' 1@ A? A ' A'
@= ‰ =<@' =?E' =CC ' =G= ‰H =?E' F@' DC A?@C ' G@C@' 1A ?E' > ‰ '
G= ' AIZ@ @E' F= ' F@' ?E J @? ' G= ' I=E‰ = ' ' E E' ?A ' = @' GFA @'
>AAE ' F@' DC A?@C ' ? @?E@E' A' @= ' ; I ' C < ?@‰ ‰ F=B ?>'
A# @E' & >F J =?‰ ‰ F@ E' F@' ?E J @? ' G= ' 11 @? ‰ 1 3

212=4' /*' 8' X 0&' ! (+#' :' 4(' IE. ' '+ ; f' 7+=' 9/*:' '24' 42' J 4 +4/' +'' +==) ' P
/V ' ')94' :' '24/' W ; b' "' HN ; / '4 2&+ ''+"" (/ '4 1/ ' '' /) ' &' <:)/ '
W ld G' +=4' ' ' 1' .A' =' GA' "' A. I ' ! *2<1/=4/(' "(' ==' .EI . ' 2*/(:)/ ' '
/V ' +' : /(12 ; 3' G' /+19' DME =// ; /: ' 1*/+(*# 2& 2" ' 2 '' 49+4' +'' ' : 14P
) # G' +=4' ' ' 1' .Y '=' GA' "' A. I ' ; / '4 &2(; <(: /(' 7 9 19' +**/) / :' +'' +==+<*4'
WJd / '0=S' 1+=/' +1:2' +*: ' ' ' 2'' W 9/ : : 2' ' +' :' 49+4' 49/' "(P
' **/ (' ' +' :' +7(/ '1/' ' G' /+19' =2' /(' 049/' =+ :' W 3 ' 9/ : : 2' ' : :'
DDI ' G' +=4' ' ' 1' .A' =' GA' "' A. I =4(0/' 1 $ 7+=' '24' 49/(/&2(/ '9+: ' ' :'
7 9/(/' 4' =' =+ :' 49+4' 49 =' 4' =// ; =' =' '24' =/' /) ' &' (/=" ' ' ..' W ' N. H ' ' ' !
* 0/' 49/' 1+=/' 2& *+# ') ' +' (233/(# '' 49/' RNB /) ' 192*+=' ; 2 ' ' '
: 7 /** ') ' 92<=/' 2& ' 7 9 19' 4<(' =' 2<4' 42' G. E' 2(:' / ' ; +' ' ' ' *: /(=2' ' '
3/' 49/' : 7/** ') 92<=/' 2& ' 3/1+<=/' 49+4' +' :' 2*4 ; +' ' ' //' /) ' &' *+(0/' .'
1 (1< ; =4+' 1/' =' "/(&/14*# ; ; +4/(+# '' ' :' IG. ' X
(233/(#' 7 9 19' =' 2<=4/ :' 2& 1*/()#) / ' /P W+ld /) ' +7/=' ; - ' ' YG' '
(+**#' //' /V &' V ; '=4/(' Y ' ' ' 3/44/(' 236/14 2'' 72<*:' 9+J/' 3// '' 49+4'
ANE' 79/(/' +' = ; *+(' ; =4+0/' '' +' =<(P 49/' ' : 14 ; / '4 : :' '24' +**/) /' 49+4' 49/

' 1' F@' ?E J@? ' F=C>@' =' I C> =C ' G F' ? @? ' A' AJJ ' =' 1@ A? ' G ' F@' DDAC @E' I ' @B E@? @' A1' =' 1@ A? ' = = ' AJJ @E' 7 '3' ?E' ' @@J ' 11 @? ' ?' = ' = @ ' GF@C@' =' 1@ A? ' F= ' = = ' I@@?' AJJ @E' A' = @>@' F@' AJJ A?' A1'

9f' ': 14 ; /'4' =92<*:' =4+4/' +'' '4/ '4' 42' 12 : ; 4' +=' 49/' 12 ; P ; 44 ')' +' &/*2'#

;' = ' F= ' ' 11 @? ' @B @? @' A1' F@' ? @? A?' 783 ' F@' ? @? ' A' AJJ ' =' 1@ A? ' =?E' F@' = = ' AJJ qd?' A1' ' J= ' IA F' I@' = @>@E' ;' =?E' ?' >@?@C=' F ' ' F@' I@ @C' JAE@' A1' = @T J@? ' 163' AC' GF@C@' F ' ' EA?@' F@' DC A?@C' J = ' F@' A?B @E' A1' F@' I C> =C ' G F' ? @? ' A' AJJ ' F@' 1@ A? ' FA >F' F@' I@ = b @E' A1' F@' 1@ A? ' AC' A?B @E' A1' F@' 1@ A ' FA >F' F@' I@ = b @E' ' A1' F@' I C> =C ' ' ?' ?E J@? ' WAC' I C> =C ' = @>@E' F= ' F@' DC A?@C' 7 F@' EG@ ?> FA @' A1' ' ''E' I C' =C A ' E E' IC@=<' =?E' @? @C' G F' ? @? ' F@' >AAE ' =?E' F= @ ' ?' F@' =J@' EG@ ?> FA @' F@?' =?E' F@C@' I@ ?>' 1@ A? A ' =?E' I C> =C A ' A' @= ' =?E' F@?' =?E' F@C@' A @' =' b =? ' A1' =C @ ' A1' F@' >AAE ' =?E' F= @ ' A1' F@' = E' ' CEO' ' CE' G= ' F@' @?=? ' A1' F@' FA @' ;' I ' F@' =?E' GA' A F@C' =E @ ' B@E' ?' ' ?' AJJA?' @= F' A1' F@' FC@@' A? C I ?>' =?' @b = ' = J A ? ' A' F@' @ =I FT J@? ' =?E' F@' =C @ ' A @?' F=E' I@@?' IA >F ' I ' ' CE' ;' I ' =' F@' @?E' A1' F@' @=C' F@ ' GA E' I@' D= E' 1AC' I ' F@' FC@@' =E1 ' GF@?' F@ ' E B E@E' F@' @]D@? @ ' A1' F@' @ =I FJ@? ' ; ' ' G= ' AIZ@ @E' F= ' F@' =C @ ' G@C@' F@' >AAE ' A1' F@' FC@@' =E @ ;' F ' ' G= ' F@ E' F= ' A' DDAC ' F ' ?E J@? ' ' G= ' 11 @?' A' DCAB@' F= ' F@' DC A?@C' ICA<@' =?E' @? @C@E' F@' FA @' ?' F@' ? >F ' J @' G F' ? @? ' A' @= ' F@' >AAE ' F@C@' >@?@C= ' =?E' F@C@1AC@' F@' @B E@? @' DDAC @E' F@' ?E J@? ' NId

'4/ '4' 42' (+J =9

?' ?E J@? ' = @>@E' F= ' F@' DC A?@C' F C> =Z A ' ICA<@' =?E' @? @C@E' =' EG@ ?> FA @' 7G F' ? @? ' A?@' @' #=B @ ' ?' F@' = E' EG@ ?> FA @' F@?' I@ ?>' B A @? ' =?E' =>= ? ' F@C' G ' F@?' =?E' F@C@' 1@ A? A ' A' C=B F' =?E' =C?= ' <?AG' =?E' F= ' F@' DC A?@C' F@?' =?E' F@C@' ?' F@' = E' EG@ ?> FA @' 1@ A? A ' E E' GA ?E' F@' = E' ' #=B @ ' F@?' I@ ?>' ?' F@' = E' EG@ ?> ' FA @;' =?E' ' G= ' AIZ@ @E' F= ' F@ ?E J@? ' A >F ' A' F=B@' = @>@E' F@' ? @? ' A' C=B F' ?' F@' = E' EG@ ?> FA @' =?E' ?A' J @C@ 7 F@?' =?E' F@C@;' I !' F@' AIZ@ A?' G= ' AB@CC @E' N d

<4' : &/(/ '4' '4/ '4=' ;' +# 3f' *+ :' '' 49f' ' : 14 ; /' 4

' FA E' I@' AI @CB@E' = A' F= ' E 11@C@? ' ? @? ' J = ' I@' = @E' ?' F@' ?E J@? ' F ' GF@C@' F@' 1 C ' A ? ' A1' =?' ?E J@? ' 1AC' I C> =C ' = E' F@' 1= ' A' F=B@' I@@?' EA?@' G F' ? @? ' A' @=' F@' >AAE ' A1' =' D@C A?;' =?E' F@' @ A?E' A ? ' = E' ' G F' ? @? ' A' J CE@C' F J';' ' G= ' AIZ@ @E' DA?' =' >@?@C=' B@CE ' A1' > ' F= ' F@C@' G@C@' GA' @B@C=' =D =' F=C>@ ' ?' F@' =J@' ?E T J@? ' @?E ?>' A' E@DC B@' F@' DC A?@C' A1' F@' F= @?>@ ' A' GF F' F@' GA E' F=B@' I@@?' @? @E' 1' F@C@' F=E' I@@?' E ? ' ?E J@? ' =?E' = A' @?E ?>' A' D@CD @]' F J' ?' F ' E@1@? @;' I ' F@' ?E

"(=2 ' /(=' 3(20f' +' :' / '4/ (/ :' 7 49' '4/ '4' 42' =4/+*' 9/' 72(:=' 0 7 49' '4/ '4' 1 $:2' '24' '/1/==+(*#' (/&/(' 42' 49/' 3(/+0 ')' +' :' / '4/ (')' ? +' :' &' 12 ' & ' / :' 42' 49/' 3/ ')' '' 49/' : 7 /** ') 92<=/' ' 2'2&&/ '1f' =' 19+()/ :

!' 3' /V' ' 212=4' /*' HM' +'' ' : 14P ; / '4' &2(' +' 3 7)*+(#' 7 49' '4/ '4' 42' 12 ; P ; 4' +' (+"/ ' +' :' /J : / ' 1/' 2&+' (+"/ ' +14<+**#' 12 ; ; 44/ :

"VB' .' +*/ ' AYM' G' +=4' ' ' 1' .Y

=' GA ' "' ' A. I /V ' L<(' J+*' ' ' ' IIA

W44b' .' +*/ ' AAN' /V ' L<(' J+* DC=

WY.' /) ' ' *+(O/ ' .' ' ' ' IG. ' 2*/(:) / ' ' +' :' +(O/ '

W1b' /) ' ' +4O ' =' ' ' ' ' GYI' 2 4 ; +' ' ' 9f' "(=2 ' /(' 7 +=' +1T< 44p/? 2&' 49/' 3<()*+(#' 2(' 49/' "2 ' 4' 72<*:' 9+JH 3/ / '' (/=/(J/ :

J@? G= FA E@?>AAE A? F@ >CA ?E F= G= F@ =J@ 1=
= E @B E@? @ A? = E ?E 11@C@? G= N_d
=B ?>> F C@= @E A1 F@ A11@? @ A1 I C> =C = ACE ?>> A & 49/ "(2
E@1 ? A? G@ J = ?b C@ FAC A? @C? ?>> F@ DCA @@E ?> R@@^ R>
=>= ? A11@?E@C I ?E J @? (

J' < #! & F"!6

@ @? F= F@ ?E J@? FA E = @ F@1= A F=B@ : 14 ; / '4
I@@?' EA?u ?' F@ ? >F N@d & F@C@ =?' ?E J@? 1AC I C> =C
= @>@E F= F@ DC A?@C I CA<@ ? A =EG@ ?> FA @ 7=IA F@ 49+4 49/ &+14
FA C A1 @ @B@?' ?' F@ ? >F H G=R A? @?E@E F= A >F A 49/ >F
F=B@ I@@?' = @>@E F= F@ A11@? @ G= AJ J @E I@ G@@?' F@
FA C A1 ? ?@ AH A < = ? >F =?E]' AH A < F@ 1A AG ?>' JAC?
1 >; 5= @ A? 7 F ?< J J = @C = GF@ F@C F@ J @ I@
J@? A?@E AC ?A F@ ? >F F=E ?A I@@?' = @E F ?< GA E D@CF=D I@
11 @? 1 F@ ?E J@? F=C>@E F@ A11@? @ A F=B@ I@@?' EA?@
[I > =C A n F= !GA E EA H NMd ' DA ?@ @ =C FAGT
@B@C F= F@ @B E@? @ FA E ACC@ DA?E G F F@ = @>= A?' ,
A F@ FA C A F= F@ @ @ =C FAGT
A F@ ? >F Nbd 4
F@ A11@? @ J I@ = E = G@ F=B@ @@? A F=B@ I@@?' AJT /)+4 &4 +
J @E ?' =' J =? A? FA @ AC EG@ ?> FA @ F@ @??' #5 ! 2 42 49/ *+ '=2<
<4> I@ ?>' F= JAC@ = =EAD @E ?' JAE@ J DC= @ N d 2(W 7/**) 92 '=/
GA E ?A I@ 11 @? A' = ' >@?@C= = F=B ?>' I@@?' AJT
J @E ?' =' FA @ N d & F@C@ =' I C> =C F=E I@@?' AJJ @E
?' F' =?' A FA @ = I =G G= A? E@C@E D=C A1 F@
EG@ ?> FA @ J F=B@ I@@?' = E = F=B ?>' I@@?' EA?@' ?'
F@ EG@ ?> FA @ AC ?' =' =I @ I=J , D=C A1 F@ EG@ ?>
FA @' ; @ F@C A1 &F F' = @J @? J >F I@ =EAD @E N d
F@ =% @>= A?' A1 F@ A11@? @ F=B ?>' I@@?' AJJ @E ?' =
J=? A? FA @ J I@ ?E@C AAE FAG@B@C = A?1 ?@E A
I C> =C @ ?' DC B= @ FA @ ; 1AC FA >F F= I@@?' b = ?
AI @CB@E F= = ' F C F' #4&> &6 !4 6 M !7 3 F@
I@ @C AD ? A?' F= F@ ?E J@? ?' F@ = @ A1 =' I C> =C
AJJ @E ?' =' F C F ?@@E ?A DCA @@E DA?' F' =' DDA A?
I G I@ J AC@ DCAD@C 1C=J @E = ACE ?>' A F@ C= F' A1 F@

WW&d 914 "=2 S 1+=/ G +=4 M 1 HDD
.A H GY " A.A R3B + +=4 1 .A =' GI " A.H
W/d ; +*/ AIN J ; " HD +: " J ; +*/ AAM
:)42 S 1+=/ <(S <=4 4 L 3` 1C3 !+(*+ : S 1+=/ ; /+19 . II 79/(/
5 =' G +=4 M .A =' GI 2<4 92<=/ 9+J) 3// 3(20/ 2" / '
" A.H ' G +*/ .DN 4 = =+ : 49+4 49/ ' : 14 ; / '4 7+= &2(3(/+0) +' :
49/ ' : 14 ; / '4 2<)94 42 9/ 3 / '4/( ) 49/ : 7 /**) 92 =/ +' : 233=S
3 3 K 3<4 49+4 +112(:P 1+=/ G +=4 ! 1 .A =' GI " A.G
) 42 =2 ; / 2" ' 2 = 3 1+((/ = +' :' =' GA " A.H 79/(/ -9/ ' : 14 ; / '4
=<&& 1 / '4 /V "(/== 2 '' 49+4 4 7+= :2 / '' 7+= &2(3(/+0) +' :' / '4/( ) 49/ =4+3*/
49/ ')94 2& ' '' +(4 2& 9 = : 7 /*) 92 <=/
1*3 /) e 92 ; "=2 ' G 2V M ":B H '=4 YI

1= %' I ' = ?>' F@' A11@? @' A' F=B@' I@@?' AJJ @E' ?' F@' D=C F'
I?C F' A1' F@' D=C F' A' GF F' ' I@ A?> ' N/d

4+4/ ; /+4]B
49/' '+ ; /' '
49/' 27 ' /(2&
49/' : 7/** ') '
92<=/

' '?@ @ =C ' A' = @' F@' ?=J @' A1' F@' AG?@C' A1' F@' EG@ ?>'
FA @%' ?' F@' ?E J@? %' G F' = C= %' =?E' F' @C = ? ' A' =
AJJA?' ? @? %' = ' %' ?' >@?@C= %' ?@ @ =C ' ?' =' E@ C D A?' A1' =
D=C ' GFA' F= ' = ?@E' =?' ?Z C %' NJd' ?' =' =>@' GF@C@' F@
?E J@? ' = @E' F@' I C> =C ' A' F=B@' I@@?' AJJ uE' ?' F@
FAD' >C> #6""!' - ! 6"#!'G FA ' J@? A? ?>' F@' C?=J@' A1' F@
AG?@C%' 'G=' EA I @E' GF@ F@C' 'G=' >AAE%' 1 3' ?E' GF@C@' F@
?=J@' A1' F@' AG?@C' A1' F@' EG@ ?> FA @' G=' = >@ F@C' J =<@?%
=' GF@C@' F@' ?E J@?' = E4 F@' I C> =C ' A' 1B@' I@@?' AJJ @E'
?' F@' EG@ ?> FA @' A1' AF?' ?A]= %' =?E4:' =DD@Z C@E' F=' '
GJ' ?A ' F@' EG@ ?> FA @' A1' AF?' ?A]= %' <' G=' FA E@?' F='
F@' DC A?@C' A E' ?A ' I@' 1A ?E' > ' @ F@C' A1H F@' I C> = %'
AC' A1' @= ?>' A' F@' =JA ?' A1' : ' ?' F@' EG@ ?> FA @%'
' I@ ?>' @ @? = %' ?' IA F' = @ %' A' = @' ?' F@' ?E J@?' F@'
?=J@' A1' F@' D@C A?' ?' GFA @' FA @' F@' A11@? @ ' =C@' AJJ @E%' NAd
?E' GF@C@' F@' DC A?@C' G=' ?E @E' 1AC' @= ?>' ?' F@' EG@ ?>'
FA @' A1' =C=F' ?? %' =?E' ' =DD@=C@E' ?' @B E@? @' F=' F@C' ?=J@'
G=' =C=F' A?EA?%' F@' B=C =? @' G=' FA E@?' A' F@' 1= =' A' 1'
=D =' D=C ' A1' F@' ?E J@? %' " B' 4

, 4+4/ ; /' 4 2&
49/' "+(=9'
79/(/' 49 ''
92<=/' ='
=4<+4/ :

F@' D=C F' ?' GF F' F@' EG@ ?> FA @' ' = E' A' I@' = @'
J ' I@' ACC@ ' = @E%' = ' =' B=C =? @' ?' F ' C@ D@ ' G ' I@
1= = %' Nbd' ' =?' =J@?E J@?' GA E' ?AG' ?' >@?@C=' I@' = AG@E' A'
1 C@' F@' E@1@ %' @@' BA ' %' D' 8-
DA?' =?' ?E J@?' 1AC' @= ?>' ?' =' EG@ ?> FA @%' 'F=' '
I@@?' F@ E%' F=' 1' ' ?A ' @]DC@ ' = @E 'GF@C@' q@ EG@ ?>'
FA @' ' = @E%' ' F=' I@' =<@?' A' I@' = @' ? ' F@' D=@'
?=J@E' ?' F@' ?E J@?' I ' G=' A1' B@? @' F@' ?E J@?'
= @E%' F=' F@' DC A?@C%' A?%' , %' = ' B@CDAA %' A?@' A=' A1' ' %'
A1' F@' B= @' A1' : 4' ?' F@' EG@ ?> FA @' A1' & ' %' F@?' =?E'
F@C@' I@ ?>%' F@?' =?E' F@C@' 1@ A? A ' E E' @= ;' =?E%' =' =@
I@ ?>'C@ @CB@E' DA?' F@' b @ A?%' GF@ F@C' F@' ?E J@?' F@G@E'
11 @? ' F=' F@' EG@ ?> FA @' G=' = @' =' B@CDAA ;' F@'
Z E>@ 'F@ E' F=' 'E E' NCd' A' GF@C@' =?' ?E J@?' 1AC' I C> =C '
= @>@E' F=' F@' DC A?@C' 7 = @' A1' " AC A? Z]1= 6@JD @ %' ?' F@'
A ? ' A1' & AC @ @C%H 7=' " AC A? Z] = 6@JD @ ' =1AC@ = E' F@'
EG@ ?> FA @' A1' ' AA<@' F@C@' = @H 1@ A? A ' E E' IC@=<'
=?E' @? @C%' , %' =?E' ' =DD@=C@E' F=' " AC A? Z] = 6@JD @ 'G='
=' F=D@ '=?E' D@CD@ = ' C= ';' 'G='AIZ@ @E' F=' F@' ?E T
J@?' A >F' A' F=B@' = @E' F=' " AC A?' G=' =' F=D@ C %RAC'
E@ C I@E' ' ?' AJ@' A F@C' J =??@C;' I ' 5= @ A?%' %' F@ E' F='
(@]' 3' 6 'N d' G=' =' 11 @?' = FAC ' A' F@G' F=' F '
?E J@?' G=' >AAE';' F@C@' ' G=' F@ E' F=' =?' ?E J@?

W^d .' +*/ ' AAY' .' +70' ' '1' HE 49/' "(/='/' :+# =<19'+'' 2 ; == 2'' 72<*:'
=' .D' ? +=4' ' '1' .Y' =' GI' "' A.G 3/' 12 '= : /(/ :' +=' ; +4/(+*
) * .' +=4' ' '1' .Y' =' GI' "' A.H " B 9 4/S' 1+=/' .' /+19' GAG' G +=4'
.' 9 4' (; ' +7' G.A' ' O' A' 9 4' ' '1' .A' =' GI' "' A.H
! (; ' +7' .MNY' =' 42' + ; /' : ')' 49/' " B 22: 7+(:S' 1+=/' .' /+19' GAH'
' : 14 ; /' 4 +4 49/' 4(+*' =/' J2*' .' "' YG '24/' W+b' :+ (' /(6/+'4' /12(:/(
" B 2*/S' 1+=/' 22(' IYY' .' +*/' "OB' G 4+(O' (; ' */+: ' IHD' '24/
AAE' G +=4' ' '1' .Y' ='): " ' A.H' "V8
'' 22(4' =+ :' 42' 9+J/' 3// '' '2 : /' ' ' /V ' +"" /(' ' +#*/#' '
)22 :' ? 3<4 49 =' =' '24' ; /' 4 2' / :' 3# 2(:' +' ' ' ' ' ' ' ' II
+*/' '' E 9 4' (; ' .MNE' 4' =' " B
=+ :' 49+4 49/(/' 1+ '' 3/' * 44*/' :2<34 49+4 +4

= @> ?>' F= ' F@' D ! A?@C 7 = ' B@CDAA 'S' E' IC@=<' =?E' @? @C' +'
EG@ ?> FA @' 7 F@C@' = @'H G= ' >AAE';' =?E' F@C@' G= ' ?A'
C@= A?' GF ' =?' ?E J @? ' = @> ?>' =' I C> =C ' 7 = ' " AC A? Z] = '
6@JD @ 'H G= '?A ' = A' >AAE;' 'I@ ?>' DCAB@E' F= ' F@C@' G= ' F'
=' E C %' N d' %

?' =?' ?E J@?' = @> ?>' =' EG@ ?> FA @' A' I@' = @E' 7 = '
F@' D=C F' =1 C@ = E%H F@' D=C F' = J@? A?@E' J ' I@' ?T
@?E@E ' NGd' & F@C@' =?' ?E J@?' = @>@E' F= ' =' I C> =C ' G= '
AJJ @E' 7 = ' F@' D=C F' A1' & AA G F%H =?E' F@' DCA @ AC' DCAB@E'
F= ' F@' ACC@ ' Z= J@' A1' F@' D=C F' G= ' 7 ' * =C %' & AA G F%H I '
F@' D=C F' ' = @E' F@' D=C F' A1' & AA G F' ?' F@' @? C= ' C J ?= '
A C ' %' :' ,' 8' :%' ' %' ' -';' 'G= ' F@ E%' F= ' = ' F= '
F@G@E' F=1' F@' >=C F' G= ' <?AG?' I ' F@' ?= J@' A1' F@' D=C F' A1'
& AA G F%' F@' ?E J@?' G= ' 11 @? %' 7 3' & F@C@' =' A ?'
= @>@E' F= ' F@' DC A?@C %' 7 = @' A1' F@' D=C F' A1' 5A? DAA %' = '
F@' D=C F' =1AC@ = E%' ?' F@' A ? '=1AC@ = E%' F@' EG@ ?> FA @' A1'
F@' =CE =? ' A1' F@' 5AAC' A1' F@' 5A? DAA ' ? A?' F@C@' = @%'
1@ A? A ' E E' IC@=<%H =?E' 'G= ' AIZ@ @E' F= ' F@' GACE ' 7 F@C@'
= @'H C@1@CC@E' A' F@' 5A? DAA ' ? A?';' 5 = %' %' F@ E' F= '
' @' GACE ' C@1@CC@E' A' F@' D=C F' =1AC@ = E%' =?E' F@C@1AC@' F@'
?E ?b'?' G= '>AAE%' 153

F@' =J@' = C= ' A1' E@ C D A?' =DD @ ' A' I C> =C %' =?E' @= T
?>' ?' =' EG@ ?> FA @' AC' FAD%' =?E' F@C@1AC@' F@' 1A AG ?>' = @ '
=C@' F@C@' ? @C @E

F@' A11@? @' A1' IC@=< ?>' =?E' @? @C ?>' =' FAD' ' A = %' =?E' +(=9 "+(4*#
F@C@1AC@%' F@' = A?' A1' F@' FAD' J ' I@' ACC@ ' E@ C I@E' ?' ['4 12<'4#
F@' ?E J@?' & F@C@' =?' ?E J@?' F=C>@E' F= ' ' CAA<@ %
7 = @' A1' F@' D=C F' A1' '5@ @C' F@' C@= %' ?' F@' A ? ' A1' & ACT
@ @C%H 7 F@' G=C@FA @' A1' & ' & @II' F@C@' = @%H 1@ A? A '
E E' IC@=<' =?E' @? @C% , %' =?E' ' =DD@=C@E' F= ' F@' D=C F' A1'
5@ @C' F@' C@= ' ' D=C ' = @' ?' F@' A ? ' A1' & AC @ @C%' =?E'
D=C ' = @' ?' F@' A ? ' A1' F@' ' A1' & AC @ @C%' =?E' F= ' F@'
G=C@FA @' G= ' ?' F= ' D=C ' A1' F@' D=C F' GF F' ' ?' F@' A ? ' A1'
& AC @ @C';' 5= @ A?%' %' =1 @C' C@1@CC ?>' A' - ?' B' N " ! ' 1?3' F@ E'
F= ' F@' ?E J@?' G= ' ?A ' DDAC @E%' = ' F ' ' =' A = ' E@ C DT
A?%' I ' ?' - ?' B' N " ! ' F@' D=C F' G= ' A? ' = E' I ' G= ' A1'
B@? @' A' =' JD @' =C @? ' F@' DC A?@C ' G@C@%' FAG@B@C%' A?T
B @E' A1' =' JD @' =C @? %' 1'3' Fu' DCAD@C' JAE@' GA E' F B@'
I@@?' A' = @' F= ' F@' A11@? @' G= ' AJJ @E' 7 ?' F= ' D=C ' A1' F@'
D=C F' A1' ' 5@ @C' F@' C@= ' GF F' ' = @' ?' F@' A ? ' A1'
& AC @ @C H

A%' F@' A11@? @' A1' @= ?>' ?' =' EG@ ?> FA @' ' A = %' =?E'
A? @b @? ' F@' = A?' A1' F@' FA @' J ' I@' ACC@ ' E@T
C I@E';' =?E' 1' F@' FA @' I@' = @E' A' I@' = @E' ?' =' D=C F' =?E

,13' , /)' ' (220/=' ' M' ' !' W42d /)' ' (27/' ' I' A]% ' 'GYY'
' AII' 79 19' /((2'/2<=*# &'49/' 72(:=9+:' (/&/((/:' 42' 49/' ' 2' '
:/=1(3/=' 49/' "(=2'/(=' +=' 0*+4/' ' ' 49/'(/' 7+=' '249 ')' '' 49/' 236/14 2'' ? &2('
'2& 2(42' 6<V4+ ;"=/# S 49/'' ' : 14 ; /'4' +**/)/:' 49+4' 49/'
)&* /V' ' 19+(:=' ' ' ' 23' .DD' ' 2'' 7+=' '' 49/' 12<'4#' +' :' 49/' 3(/+0P
+(0' ' ' +' :' ! +=/*//' ' //' /V' ')' 7+=' + /)/:' 42' 3/' +4' 49/' "+(=9 2&'
' 4' +(#' / 1/=4/(' ' ' ' HGD' 2'4#"22*' +' :' ''49/' 12<'4#
/V' ' 2<'4/=492("/' G' ' ' :' IED' W+0' I' ' ' ' HYH
+*&2(:' &' '492'#' E')' DA' /V' &' 1'3' 0/)' X' (220/=' +' '249/(=' ' 2(' '
( )94' ' ' ' ' IHI "(' ==' .EIG' ' f' !' '
"&' /)' ' 4' 29' ' N' ' ' ' IM' .' ' ' +(=' AIH
+(0/' ' +' :' 2=+'T</4'

A ? ' ?= J @E' ' J V 4' I @' DCAB@E' F= ' = ' F@' D=C F' ' ?' F= '
A ? ' ;' =?E' 1' ' I @' ?A ' A' DCAB@E' F@' DC A?@C' =??A ' I@' A?T
B @E' A1' F@' A11@? @' A1' @= ?>' ?' F@' EG@ ?> FA @' I ' F@' J= '
I @' A?B @E' A1' =C @? ' 783
& F@C@' =?' ?E J @? ' 1AC' Z C> =C ' = @>@E' F= ' F@' DC A?@C '
= ' F@' D=C F' A1' ' EJ ?E' F@' EG@ ?> FA @' A1' ' & ' F@C@'
= @' E E' IC@=<' , ' G F' ? @? ' A' @= ' F@' >AAE ' F@C@ ?' =?E'
' F@?' =?E' F@C@' E E' @= ' F@' >AAE ' A1' ' = = @ ' =?E' ' =DD@=C@E'
F= ' ' = = @ ' G= ' =' > @ ' A D ?>' =' !AAJ' ?' =' =B@C?' =?E' F@'
DC A?@C ' F=E' @? @C@E' I ' F@' AD@?' =B@C?' EAAC' ?E' @? @C@E' F '
CAAJ' I ' J @=? ' A1' <@ @ A?' <@ ' ;' F@' =B@C?' G= ' = @E' ?' GA'
D=C F@ ' F@' IA ?E=C ' ?@' GF F' @D=C= @E' J J' C ?? ?>' FCA >F'
F@' CAAJ' A1' = = @ ' ;' F@' EAAC' A1' F@' CAAJ' =?=' F@' >C@= @C' D=C ' A1'
F@' CAAJ' G@C@' ?' ' EJ ?EH' ;' I ' F@' >AAE ' G@C@' A @?' 1CAJ' =
F@ ' ?' ' * F=@ H' D=C F' ;' ' G= ' AIZ@ @E' F= ' F@C@' G= ' =
B=C =? @' = ' F@' FA @' G= ' ?A ' GFA ' = @' ?' ' EJ ?EH' $
I ' F@' (@ ACE@C' F@ E' F= ' F@C@' G= ' ?A ' ;' F@' FAG@B@C' C@ AJT
J @?E@E' F@' Z C ' A' J ' F@' B@CE ' A' IC@=< ?>' G F' ? @? ' A'
@= ' =?E' F@' =1 @CG=CE ' = @E' F= ' F@' F=E' A? @E' GA' A1' F@'
@=C?@E' Z E>@ ' GFA' G@C@' A1' AD ? A?' F= ' F@' @B E@? @' DDAC E'
F@' ?E J @? ' 163'

,' 9/8/' 492' ? @' F@' .' @A' :' ' :' -' N d' 1' =' I C> =C ' I@' AJT
4(|4' =' +'' +:62 ' ')' J @E' G F ?' 1 B@' F ?EC@E' =CE ' A1' F@' IA ?E=C ' A1' =' A ? '
/2<'4# <' :/(' F@' A11@?E@C ' J = ' I@' C @E' ?' F@' =EZA ? ?>' A ? ' ?' ?E T
49/' .' /2' I' J @? ' 1AC' I C> =C ' GF F' F=E' I@@?' 1A ?E' I ' F@' >C=?E' Z C '1AC'
:' :- F@' A ? ' A1' @C@1ACE' = @>@E' F@' I C> =C ' A' F=B@' I@@?' AJT
J @E' 7= ' F@' D=C F' A1' ?> F' <?@C' ?' F@' A ? ' A1'
A @ @C' G F ?' 1 B@' F ?EC@E' =CE ' A1' F@' IA ?E=C ' A1' F@'
A ? ' A1' @C@1ACE H DA?' F@' =CC= >? J @? ' A1' F@' DC A?@C '
= ' @C@1ACE' ' G= ' AIZ@ @E' F= ' F@' ?E J @? ' G= ' I=E' A?'
F@' >CA ?E' F= ' F@' .' @A' :' ' :' -' A? ' =DD @E' A' =C @? '
=?E' A F@C' C=? AC '1@ A? @ ' =?E' ?A ' A' 1@ A? @ ' GF F' G@C@' A ='
?' F@ C' ?= C@;' I ' G= ' F@ E' F= ' F@' ?E J @? ' G= ' >AAE';
F@' @11@ ' A1' F@' .' @A' :' ' :' -' G= ' A' > B@' =EZA ? ?>'
A ? @ ' A? CC@? ' Z C E A?' AB@C' A?@' FA =?E' =CE ;' F@'
GACE ' 7E@= ' G F' H =DD @E' A' Z @ ' A1' F@' D@= @' GFA' F=E' A?T
@b @? ' Z C E A?' AB@C' 1 B@' F ?EC@E' =CE ' ?' F@' =EZA ? ?>'
A ? ' A' F= ' ?' GF F' F@ ' G@C@' b = 1 @E' A' = ;' F@' GACE '
7 ?b C@E' A1' H =DD @E' A' F@' >C=?E' Z C ';' 7 C @E' H A' F@' D@ '
Z C ';' =?E' 7E@ @C J ?@E' =?E' D ? F@E H A' F@' A C ' A1' @ A? ' =?E'
= K@ ' N d' %

VB' /) ' , ' +*4/(' +10=2 ' ' ' ! ' W ! *2<1/=4/(' "(' ==' .EIG
"\B' /) ' ' 27/**' .' 2V' ' ' .NM
W{D' //49/' =/14 2 ' ' J2*' ' ' " ' A
W1D' /V' , ' +10 ' 7)+'' +' :' +' 249/(' ' ' ' ' ' ' ' ' '
/(/&2(:' "(' ==' .EGN' +(0/' ' ' ' ' ' ' '

= @% F@' DC A?@C' >F ' F=B@' I@@?' A?B @E% A1' F@' I C> =Cv'% =?E' 1A ?E' ?A ' > ' A1' 1@ A? % AC' A?B @E' A1' F@' 1@ A? ' DA?' F@' 8' ,' ' U EG!' % ' % =?E' 1A ?E' ?A ' > ' A1 F@' I C> =C ;' ?' @ F@C' A1' GF F' = @ ' F@' GA E' F=B@' I@@?' A @E' A1' F ' @C> % AC' F@' J >F % F=B@' I@@?' A?BZ @E' A1' F@' =C @? ' A? % =?E' 1A ?E' ?A ' > ' A1' F@ ' I C> =C ' =?E' F@' 1@ A? ' DA?' F@' = @% ?' GF F' = @' F@' GA E' F=B@' I@@?' @? @E' A' F ' @C> % "*B

' *+# ') : &&/(/ '4 '4/ '4[' F=B@' = C@=E ' @@?' F= E 11@C@? ' ? @? ' J = ' I@' = @E' ?' F@' ?E J @? % =?E' F' =' JAE@' A1' DCA @@E ?>% I ' = ?>' F@' =J@' 1= ' ?' E 11@C@? ' G= % J = ' I@' C@?E@C@E' @]D@E @? ' I ' F@' D=C =C' C J =? @ ' A1' F@' = @% 1 3

&*+# ') 49/ "(2"/(4# ''49/)22 -' =42*/ ' DA?' =?' ?E J @? ' 1AC' AC@=< ?>' =?E' @? @C ?>' F@' FA @' A1' ' ?EC@G % =?E' @= ?>' @C = ?' >AAE % * E' ?' @' 1 C 4' A ? ! A' @' F@' DCAD@C ' A1' ' ?EC@G % =?E' ?' F@' @ A?E' A1' F@' W @@?% ' =DD@=C@E' F= ' F@' F I=?E' A1' ' ?EC@G ' G= ' =' A?B @E' 1@ A?% =?E' ?' >=A ' ?E@C' F ' @? @? @' = ' F@' J @' F@' 1@ A? ' G= ' AJT J @E% I ' F@' G 1@' A? ? @E' ?' DA @ A?' A1' F@' FA @' =?E' F@' >AAE ' ' F@ ' G@C@' A @?;' ' G= ' I J @E' F= ' F@' >AAE 4G@C@' ?@ F@C' F@' DCAD@C ' A1' ' ?EC@G ' ?AC' A1' F@' W @@?% ? ' A11 @ 1A ?E' ;' I ' DA?' =' = @' C@ @CB@E% F@' Z E>@ ' F@ E' F= ' F@' DC A?@C' G= ' C >F ' A?B @E' A1' =C @? ' A? ' A?' F@' @ A?E' A ? % GF F' = E' F@' DCAD@C ' A1' F@' >AAE ' ?' F@' W @@? ' 1 3 ' ' 11 @?' A' = ' F@' DCAD@C ' ?' F@' ?= J @' A1' =' D@C A?' GFA ' >' I= @@' A1' ' ?' =?' ?E J @? ' 1AC' I C@=< ?>' =?E' @? @C ?>' F@' FA @' A1' 6 @KAC% =?E' @= ?>' =' G= F%X F@' DCAD@C ' A1' * @C % * @C ' DCAB@E' F= ' F@' FA @' G= ' =<@?' I ' 6 @KAC% =?E' F= ' F@' G ?@ ' =CC @E' A?' F@' I ?@ ' A1' =' B@C J F' 1AC' F@' I@?@1 ' A1' 6 @KAC' =?E' F ' 1=J % I ' F=E' F J @ 1' ?A' F=C@' ?' F@' DCA1 % =?E' ?A' = =C % I ' F@' F=E' DAG@C' A' E DA @' A1' =? ' D=C ' A1' F@' A <% GF F' G= ' GAC F' ?@=C' ' =?E' F= ' F@' J >F % 1' F@' D @= @E% =<@' J A?@ ' 1CA J' F@' ' = ' F@' G=? @E' % I ' F@' FA E' ?1AC J' 6 @KAC' F= ' F@' F=E' A' EA?@;' F@' AJ@ J@ ' IA >F ' >AAE ' 1AC' F@' FAD% =?E' AJ@ J@ ' 6 @KAC' E E' A' DA?' F ' @B E@? @' 1' G= ' F@ E% F= ' * @C ' G= ' =' I= @@f A1' F@' A <% =?E' F@C@1AC@' ?' =' = @' A1' F ' < ?E' F@' DCAD@C ' J >F ' DCAD@C ' I@' = E' ?' F J ' NJd

' +' ' F@' = @C= A?' = ' A' F@' FA C ' A1' F@' ? >F ' =?E' F@' D ? FJ@?' ?' = @ ' A1' I C> =C % GF F' G@C@' J =E@' I ' F@' ' 3 @ ' ' 9 % E E' ?A ' C@?E@C' ' ?@ @ =C ' 1AC' F@' ?E J@?' A' A? E@' 4 "6' *4"& 6" ' 6 > ! ' 7 3

O ' +' :' & ' A' =?' = b = ' DA?' =?' ?E J@?' 1AC' I C> =C ' ?' IC@=< ?>' =?E' @? @C ?>' =' EG@ ?> FA @' 6; #' 6 ! 2' 244# ' I@ ?>' D @=E@'' ?' I=C' A' =?' ?E J@?' 1AC' I C> =C ' 1AC' F@' =J@' IC@=< ?>' =?E' @? @C ?>' 5 ! <' ! & ' 4' #' @@' 3A ' % D' 9% =?E' @@' F@C@' >@?@C= ' = ' A' F@' D @=' A1' = C@1A ' = b ' =?E' = C@1A ' A?B

J :/ '1/[?' =?' ?E J@?' 1AC' I C> =C ' =?E' @= ?>' =' F=J ' =?E' FC@@' A=B@ % ' =DD@=C@E' F= ' GF= ' G= ' E@ C I@E' = ' F= J ' G= ' DAC<' GF F' G= ' ?' F@' DCA @ ' A1' C ?>% =?E' F=E' ?A ' @' I@ AJ@' F= J % =?E' F ' G= ' C= @E' A' F@' DA @ A?' A1' F@' DC A?@C' FAC ' =1 @C' F@' I C> =C ;' =?E' E@C A?% F@ E' F= % FA >F' F@' E@ C D A?' ?

Wwb' ' +*/ ' AY. ' G' +=4' ' ' 1' .A =' GD' "' A.Y' ":B' J ' IG WY' /) ' ' 9 4/9/ - ' N' ' ' ' IGN' L2(&/ 4<(/' &2(' &/*2 ' #' =' ' 27' +32* =9/ : ' =//' J2*' ' .' "' .ME

" B' /) ' ' (: ' N' ' ' ' II' 2=+ ' ' T</4' ' 4' =' 24' =4+4/ :' ''49/' (/"2(4 3# 792 ; ' 49/' 92<=/' 7+=' 211<" / : ' ' ' ! W[D' /) ' ' 2**#' ' ' ' ' DD' (=' 0 ') ' ' /' ' 27' +=' 42' 12 ' 1*<= 2 ' =' 2& ' : 14 ; / ' 4=' J2*' ' .' "' HA

I C> =C ' = 1' =C @? ' 1 >= ? ' GA%' A?@' J = ' D @=E' > ' A1' I@'
I C> =C ' =?E' =C @? %' =?E' F@' A F@C' I@' 1A ?E' > ' A1' F@' =C @? '
A? ' DA?' =?' ?E J @? ' =>= ? ' * A ' =?E' GA' A F@C ' 1AC' I C>T
=C ' =?E' @= ?>' ?' F@' EG@ ?> FA @' A' F@' B= @' A1' 1AC '
F ?> ' * A ' D @=E@E' > ' A' F@' GFA @%' =?E' F@' A F@C' GA'
G@ H@' 1A ?E' > ' A1' @= ?>' ?' F@' EG@ ?> FA @' A' F@' = J A ?'
A1' 1AC ' F ?> %' I ' = b @E' A1' F@' I C> =C ' ' = @' G= ' =B@E'
DA?' F@' b @ A?' FAG' F@' Z E> J @? ' FA E' I@' @? @C@E%' =?E' @B@?'
A1' F@' Z E>@ ' FA >F ' F= ' ' J >F ' I@' @? @C@E' =>= ? ' = ' F@'
FC@@' DC A?@C ';' C'= ? ' * A '1AC' F@' I C> =C ' =LE' =D = ' =C @? %'
=?E' =>= ? ' F@' A F@C' GA' 'AC' F@' =D = ' @? % CCA >F%' %'
=?E' A <%' %' FA >F ' A F@CG @%' I ' A <%' %' FA >F ' F= '
1' =' 4 ' E"4 >!' G@C@' @? @C@E' = ' A' * A '' 1AC' F@' I C> =C %'
Z E> J @? ' J >F ' I@' @? @C@E' =>= ? ' = ' F@' FC@@' 1AC' F@' =D = '
=C @? ' F@' @B@?' Z E>@ ' FA >F ' F= ' F@C@' J >F ' I@' = @ ' ?'
GF F%' DA?' =' ZA ? ' =C @? ' I ' @B@C= %' F@' A11@? @' A1' A?@' J >F '
I@' =>>C=B= @E' I ' I C> =C ' ?' F J' = A?@%' I@ = @' F@' J >F ' F=B@'
ICA<@?' F@' FA @' ?' F@' ? >F ' ?' F@' =I @? @' =?E' G FA ' F@'
<?AG @E>@' A1' F@' A F@C %' ?' ACE@C' A' A J @' =1 @CG=CE ' =?E' @11@ ' F@'
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<?AG ?>' A1' F@' DC@B A ' IC@=< ?>%' N d'

FC@@' D@C A? ' G@C@' ?E @E' 1AC' I C> =C %' G F' ? @? ' A' @= '
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A? ' A?@' A ? ' F@' @B E@? @' =>= ? ' GA' A1' F@ J ' G= %' F= ' F@ '
ICA<@' =?E' @? @C@E%' =?E' A @' A J @' F@? ;' F@' @B E@? @' =>= ? ' F@'
F CE' G= %' F= ' F@' A @' =' = <' A1' 1 A C%' 1CA J ' F@' = J @' FA @%' ?'
A?Z ? A?' G F' F@' A F@C' GA%' I ' F@C@' G ' ?A' @B E@? @' F= ' F@'
G= ' =' D=C ' A' F@' I C> =C ' 5=C<@%' %' FA >F ' 1 = ' DA?' F '
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F@' A F@C' A1' =C @? ' @' @]DC@ @E' EA I %' I ' FA >F ' F@' Z '
F=E' I@ @C' A?B ' = ' FC@@' A1' =C @? ' ?' @= ?>' F@' = <' A1' 1 A C;'
F@ G= ' C= F@C' A1' F ' AD ? A?%' = ' F@' @= ?>' F@' = <' A1' 1 A C%' A'
GF F' F@' F CE' CA=?' G= ' =' D=C %' G= ' ?A ' ?' F@' A? @ J D = A?' A1'
F@' A F@C' GA' G!F@?' F@ ' A J J @E' F@' I C> =C %' I ' G= ' =?'
=1 @C FA >F %' N d

C> =C ' G= ' = ' A J J A?' =G' =' 1@ A? ' G F ?' F@' I@?@1 ' A1'
@C> ;' 1 3' I ' =' F >F@C' D ? F J @? ' G= ' J DA @E' I ' F@' DCAB A?'
A1' @B@C= ' = @ '?AG' C@D@= @E' ' F@' 1AC J @C' = @ ' =C@' ?AG'
5=? FJ@?' A1' C@D@= @E%' =?E' I ' F@' - ;' ,' -8' 3 @ ' ' %' ' 8 -% 7G!FA A@B@C' F= '
I C> = ' d@' A?B @E' A1' F@' C J @' A1' I C> =C ' F= ' I@' =I @%' = ' F@' E C@T
A?' A1' F@' A C %' A' I@' <@D ' ?' D@?= ' @CB E@' 1AC' 1@%' AC' 1AC%=? '
@C J ' ?A ' @ ' F=?' FC@@' @=C ' N J d ` AC' A' I@' J DC A?@E' 1AC' =? '
@C J ' ?A ' @] @@E ?>' GA' @=C %' G F' AC' G FA ' F=CE' =IA C%' =?E'
G F' AC' G FA ' A =C ' A?1 ?@ J @? H 7?3

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'+' ;' ' ' ' AGM' '' + '+*2)2<=' 1+=/' 42' ; <(:/(' 2(' 72<' : ') ' 1 ' 7+=' 1+" 4+*
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+ ' 249/(&2(; + '=*+<) 94/(2 ''+'' ' : 14 ; / ' 4 ; / ' 4' =' +32* =9/ : ' + ' :' 4' 7+=' 12 '= : /((:'
&2(' ; J :/(' //' J24' . 'WN :' ' ' ! 3/44/(' 79/ '' 49+4' 7+=' : 2 ' /' 42' */+J/' 49/'
" B' '2 '# ; 2<=' :' /7 ' HY 2&&/ ' 1/' 2&' 3<()*+(#" <' =9+3*/' 7 49' "/ '+*
Wet' E' '=4' YH ' YA ')' *+1 2 ; ' GGE' =/(J 4<: /' &2(' * &/ ' 1 ' =2' 49+4' 49/' 2<(4
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<*#' . EYI ' //' J2*' . ' "' DH 1+=/' ? +=' +' #' / ' < ; /(+4 2 '' 2&' "+(4 1<*+(' +))(+J+4 2 '=' 72<*:' "(23+3*#' 9+J/' */&4
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& @' F=B@' @@?' F=' F ' @ ' ' F@' ? >F ' A J J @? @ '=' ' AH A <' ?' F@' @B@? ?>' =?E' @?E ' = ' ' AH A <' F@' ?@] ' J AC? ?>' 1AC' F@ D CDA @ ' A1' F ' H 183

@ ' A ' 7 <4 4 "' <6 ' "' 6 ' ' #5 ! 2 <4> ' ! ' < ' '4/(')'+' : 7/** ')' !2< ' 5 ! <' ! ' 4' 4 & & ! ' 6 ' ' *! 4 ' ' < " ! ' <6 ' < ' 2>! ' ' 92<=&/' ' 49/' 4*'* 4 ' ' 6 # ' : ! 2' 4 ! #' < " 4*' <6 ' < ' !6 : ' 6 ' < ' #! 0 ')94 7 49' " !4 ' 4 *' < ' J 4>" ' 4' < ' E ' ! ' E 6 ' " ! >#' *4 "' 6 ' ' "& ' '4/ ' 4 IX 4 ' ? #! 2' ' ' 6" ' 6 #' 4 ' ' <6 ' <" ' 163' ' 6" 4"' 12 ; ; 4 +'# 4' : ' !& E!"! 4 #'*4"' 6 ' ' "& ' 4 ' ? #! 2' 54' ' 6" ' 5 ! <' 4"' &/*2'# 5 ! <4> ' <6"#') <4>"' 6 #' 5 ! <' 4"' 5 ! <4> ' 4 ! 6"' ' 4 *! ' & P N d 4 ' ' (' ' A' F@4D ? FZD @?' A1' DC ? D= ' ' F@' @ A?E' E@>C@@' = @ T ('1 "+*=' ' 49/' =/12' :' AC @ ' =?E' = E@C ' J E' = I @ AC ' @@' ' 9' BA ' ' D ' 98 : /)(/' + ' :' ' +11/==2(/= ' A' 1 ? ?>4' F@' A11@?E@C' =?E' C@b C ?>' F J ' A' @? @C' ? A' F ' AG?' C@ A>? K=? @ '=?E' A' 1 ?E' C@ @ ' 1AC' <@@D ?>' F@' D@= @' , ' '/ ' + ' :' @@' ' .' BA ' ' D ' 9 =<(/4 /=' &2(0/ /" ')' 49/' ' A' F=CE' = I A C' , ' @@' ' 9' BA ' ' D ' 9 "/+"/ ' A' A =C ' A?1 ?@ J u? ' GF DD ?>' , ' @@' ' ' BA ' ' +(:' *+329(' y ' EM DA?' F@' C = ' A1' =? ' A11@? @' J @? A?@E' ?' F ' F=D @C' F@' 2* 4+(# 12 '9 ' / ; / '4 Z C ' J ' A?B ' A1' =?' = @ J D ' A' A J J ' F' A11@? @' =?E' +' :' 79 "" ') F@C@ DA?' F@' DC A?@C' J = ' I@' D ? F@E' = ' 1' F@' F=E' I @@?' A?T 2 ' J 14 2 '' 2& B @E' A?' =?' ?E J @?' 1AC' F' = @ J D ' ?E@C' F@' :' ,' 8' 3 @ +' +44/ ; "4 ' ' ' N d

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! 2' 6"& # ' # ' 6 ' !2< ' 5 ! <' ! ' 4' :" 6 '! 4' <4> '

?' ACE@C' A' DC@B@?' F@' A J J A?' A1' 1@ A? @ ' ?' F@' ? >F ' ' / ')'+(; / :' DCAB E@E' F ' F@' - :' ,' -8' 3 @ ' ' ' 89' F=' 7GFA A@B@C' F=' 7 49 '4/ ' 4' A' F@' 1A ?E' F ' ? >F ' =C J @E' G F' =? ' E=?>@CA ' AC' A11@? B@' G@=DA?' AC' ? C J @?' GF= A@B@C' G F' ? @?' A' I C@=<' AC' @? @C' ? A' =? ' FA @ J F@ EG@ ?> FA @' AC' A F@C' I E ?>' GF= A@B@C' =?E' A' A J J ' =? ' ')94' 1@ A? ' F@C@ ?' AC' F= ' I@' 1A ?E' I ' ? >F ' F=B ?>' ?' F ' DA @ A?' G FA ' =G1 ' @] @' N F@' DCAA1' A1' GF F' @] @' F= ' @' A?' F' D@C A?d' =? ' D < A <' <@ ' CAG' Z= <' I ' AC' A F@C' J D @ J @?' A1' FA @ I C@=< ?>' AC' F= ' I@' 1A ?E' I ' ? >F ' F=B ?>' F ' 1= @' I = <T @?@E' AC' A F@CG @' E > @E' G F' ? @?' A' A J J ' =? ' 1@ A? ' AC' F= ' I@' 1A ?E' I ' ? >F ' ?' =? ' EG@ ?> FA @' AC' A F@C' I E ?>' GF= A@B@C' G F' ? @?' A' A J J ' =? ' 1@ A? ' F@C@ ?' F= ' I@' > ' A1 '= J E@ J @=?AC' =?E' I@ ?>' A?B @E' F@C@A1' F= ' F@' =I @' = ' F@' E C@ A?' A1' F@' A C ' A' F@' <@D ' ?' D@?= ' @CB E@

"V' J ' "' HY' ' J/(# :*/' :2<3' 9+' 3//'' (+ =/ :' 79/49/(' 49+' =/14 2'' 'P WA' 4' =' 1*/+(' 49+' 79/(/' 2'' +' 4(+' 1*<: /' 3<()*+(#' 3/1+<=/' 0')94' $ =' '24' &2('3<()*+(#' 49/'3(/+0 ')'+' :'12 ; ; 44 ')' ; /' 4 2 ' / :' '' =' AG' 79 19' =' +' =7/(/ :' ; +#' 4+0/' "*+1/' 2&' 49/' 2&&/' 1/' '' 49 =' ! (/+J/=$ (; ' 14=' "' . I . ' G ' : / : ' 9/' =/14 2 ' ' &' 49/' /J : / ' 1/' "(2J/=' 49+' 1' 2' 4' :2/=' '24' /V4/' :' 42' 124*+' : 2&&/' 1/' =' 42' "(21// : ')-+)+ ' '=4' +1' " ß 24' */==' 49+' ' & J/' #/+(" &' 49/' 1/==2(/=' =/ /' J2*' . ' "' YG 2&&/' 1/' 7+=' 12 ; ; 44/ :' +&4/(' 49/' GA49' W1' /' J2 *' "' YG <*#' .EYI ' /' J2*' .' "' DH

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1AC' F@' @C J ' A1' FC@@' @=C %' NEd' AC' A' I @' J DC A?@E' 1AC' =? ' @C J'
?A ' @] @@E ?>' GA' @=C %' G F' AC' G FA ' F=CE' =I A C%' N@d

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@ ' 8 ' 7 & FA A@B@C' F= ' I @' A?B @E' A1' =? ' F' J E@T J @=?AC' = ' ?' F@' = ' DC@ @E ?>' @ A?' J @? A?@E%' A J J @E' =1 @C' =' DC@B A ' A?B A?%' @ F@C' 1AC' 1@ A? ' AC' F' J E@ J @=?AC%' F= ' A?' F' I @b @?' A?B A?' I @' =I @%' = ' F@' E C@ A?' A1' F@' A C %' A' I @' <@ D ' ?' D@?= ' @CB E@' 1AC' =? ' @C J 4'?A ' @] @@E ?>' @?' @=C ' =?E' ?A ' @ ' F=?' FC@@' N Nd' @=C ` AC' A' I @' JDC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' @=C %' G F' AC' G FA ' F=CE' =I A C H 723' 9

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@ ' :%' ! ? ' A? =I @' AC' D@= @' A11 @C' J = ' =<@' ? A' AE %' G FA ' G=CC=? %' =? ' D@C A?' GFA J ' F@' F= ' 1 ?E' ?>' AC' A @C ?>' ?' =? ' F >FG= %' =CE%' AC' A F@C' D = @%' E C ?>' F@' ? >F %' =?E' GF J' F@' F= ' F=B@' >AAE%' = @' A' D@ ' A1' F=B ?>' A J J @E%RC' I@ ?>' =I A ' A' A J J %' =? ' 1@ A? ' =>= ? ' F ' %' =?E' F= ' =<@' F' D@C A?%' = ' AA?' = ' C@= A?=I ' J = ' I @%' I @1AC@' =' Z A@' A1' F@' D@= @%' A' I @' E@= ' G F' = ACE ?>' A' =G H N d

'# '=4(<' '6/ ' 4 1+"+3*/' 2&' 3/ ')' +' :' ' 4/ ' : / :' 42' 3/ ' <=/ :' &2(' 92<=/3(/+0 ')' =' 7 49 '' 49/' 14

?' =?' ?E J @? ' F=C> ?>' F@' DC A?@C' G F' I @ ?>' 1A ?E' I ' ? >F ' ?' DA @ A?' A1' @C = ?' J D @ J @? ' A1' FA @ IC@=< ?>%' A' G %' A?@' D= C' A1' D ? @C %' @?' <@ %' =?E' A?@' D @^;@ A1' CA?%' ' =DD@=C@E' F= ' F@' DC A?@C' G= ' 1A ?E' I ' ? >F ' ?' DA @ A?' A1' =' ? J I @C' A1' FA @ EAAC' <@ ' =?E' =' D= C' A1' D ? @C %' = ' A1' GF F' G@C@' A1' =?' ACE ?=C ' E@ C D A?%' F' = ' =C@' A J J A? ' @E' 1AC' =G1 ' D CDA @ %' I ' GF F' G @C@' =D=I @' 1CA J ' F@ C'?= C@' A1' I@ ?>' @E' 1AC' D CDA @ ' A1' FA @ IC@=< ?>;' ' G=' A IZ@ @E' F=' F@' =C @ ' G@C@' ?A ' =? ' A1' FA @' J @? A?@E' ?' F@' :' , ' 8' 3 @ ' ' % ' ' ;' I ' ' G=' @1 ' A' F@' Z C ' A' = !G F@ F@C' F@' =C @ ' J >F' I @' @E' 1AC' F@' D CDA @' A1' FA @ IC@=< ?>%' =?E' GF@ F@C%' =' F@' J @' F@' DC A?@C' G=' 1A ?E' ?' DA @ A?' A1' F@ J %' F@' ? @?E@E' A

" B' L J]' #/+(=' &' 49/' 2&&/ ' 1/' 7 +=' 12 ; ' ; 44/ :' +&4/(' 49/' GA49' <*#' .EY I ' /' J2*' . ' "' DH

W]B' 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' . I' ' .A' /4 ' 1' .N' =' . ' 9/' : =4 ' 14 2 '' 3/47 / /'' 49 =' 1*+<=/' +' :' =/1 ' AI ' :' "' A. ' +=' &+(' +=' (/*+4/=' 42' 3/ ')' '' +' : 7 /** ') 92<=/' 7 49' '4/ ' 4' 42' 12 ' ; ; 4' +' &/*2 ' #' =' 49 =' 49+4' <' : / (' =/1 ' AI' 49/' / ' 4 #' ; <=4' 3/' 6 (2J/ :' 42' 9+J/' 3 / / '' '' 49/' ') 94? 3<4' < ' : / (' 49 =' 1*+<=/' " (22& 49+4' 49/' " (=2 ' / (' 7+=' '' 49/' : 7 /** ') 92<=/' 3#' ')94' 7 49' 49/' ' 4/ ' 4' 42' 12 ' ; ; 4' &/*2 ' #' =' / ' 2<)9 ' +' :' 4' =' < ' ' /1/==+(#42' "(2J/' 79/49/ (' 9/' / ' 4/ (/ :' 3#' : +# 2(' 3#' ') 94 ' =' 42' +3/442(=' =/' =' NE' J2*' ' "' .EA' ? +=' 42' 9+(:' *+32<(' 1 ' =/' J2*' . ' "' ' EM' E. ' . ' "' A.

W b' 24&4==' 49+' ' =/ J/ '' #/+(=' 79/(/' 49/' " (/J 2<=' 12 ' J 14 2 '' 7+=' &2(' &/*2 ' #' +' :' '24' */==' 49+' ' & J/' #/+(=' 79/(/' 49/' " (/J 2<=' 12 ' J 14 2 '' J#+=' &3(' ; =: / ; /+ ' 2(/' J2*' . ' "' ' DI ' DY

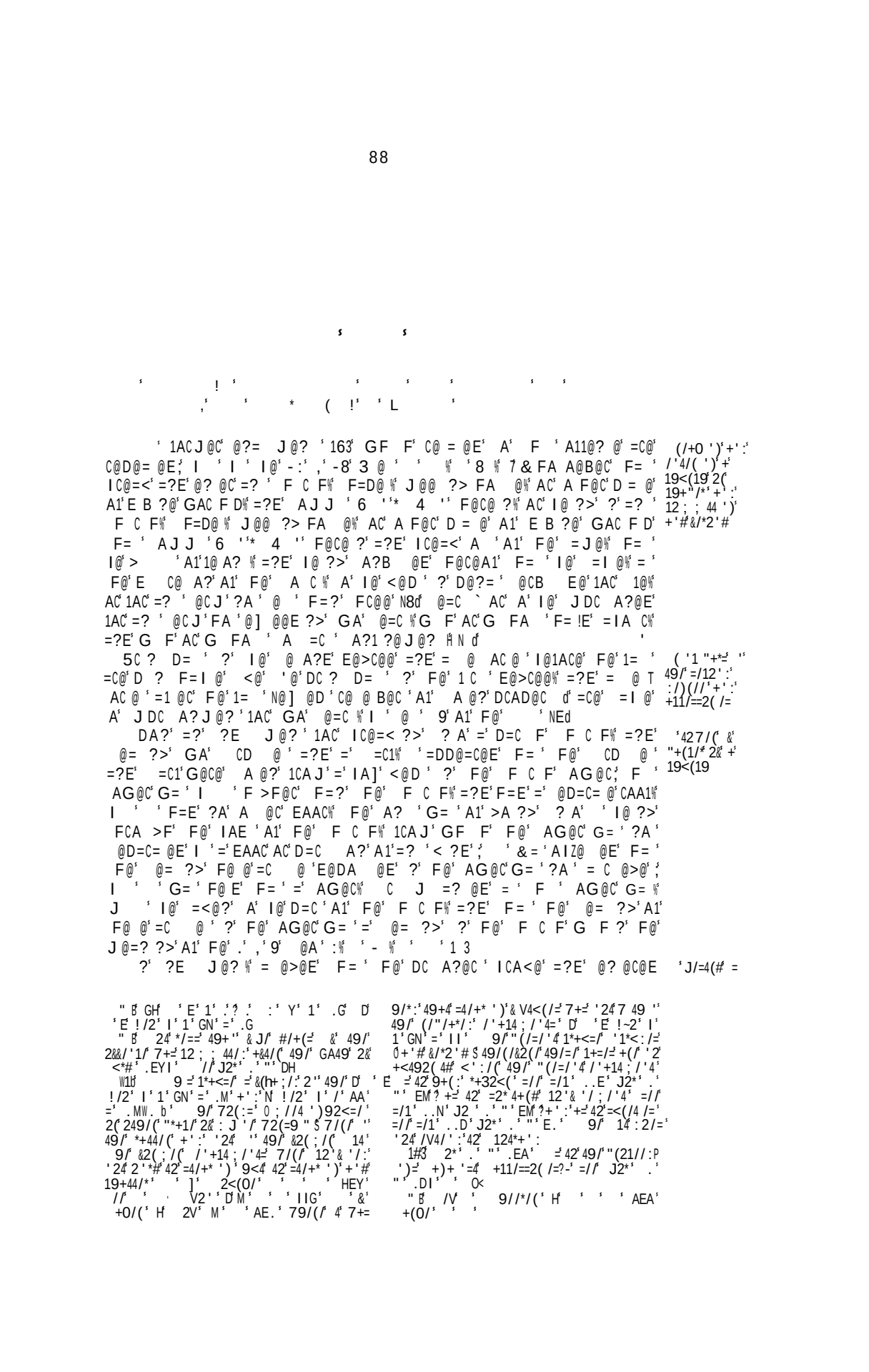
R" B' 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' . I' I' . Y' /4 ' 1' .N' =' G' /' =/1 ' . . Y' : D 5.' &2(' 49/' &2(;' 2&' ' : 14 ; / ' 4+' :' " (21/ / : ') =' 49/#/2 '' <' : / (' 49 =' :+' =/' =' 42' +3/442(=' =/1' =' NE' J2* ' . ' "' . EA' +=' 42' 9+(:' *+32<(' 1 ' =/ /' J2*' . ' "' ' EM' E. ' . ' "' A.

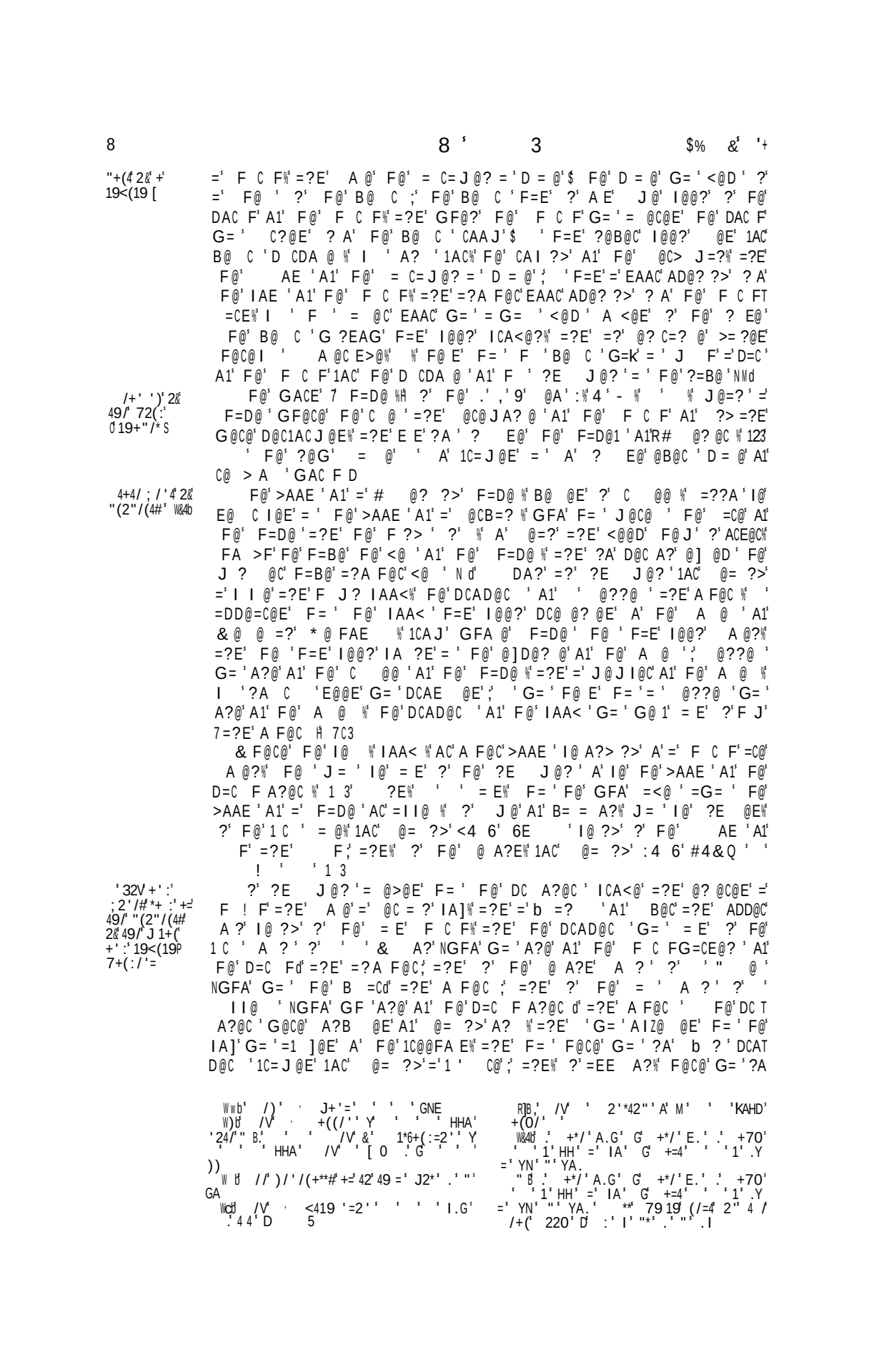
W B' 9/' 1*+<=/' +*=2' "(2J : /=' &2(' 49/' ==< ')' 2&' 7+((+' 4=' 42' +"&(/9/ ' :' +' : =/+(19' &2(' =42*/ '')22 : =' 1' /' 4 " 49/' "" /' : V

" B' /' 9+J/' =/ /'' 49+4' +' # "/(=2" 0&2< ' :' 12 ; ; 44 ')' +' # ' : 14+3*/' 2&&/ ' 1/ '' 49/' ') 94' $; +# 3/' +""(/9/ ' : / : 3# +' # "/(=2 ' ' . I' ' . A' /4 ' 1' .N' =' . . ' J2*' . ' "' YGN ? +' :' &' 49/' "/(=2 '' *+3*/' 42' 3/' =2' +""(/9/ ' : / : ' +==+<*4=' 49/' "/(=2" +""(/9/ ' : ')' 9 ; ' 1' 9/' =')< *4# 2&' + ; =: / ; /+ ' 2(' 3# =/1 ' . G' 2& 49/' =+ ; /' 14' J2*' . ' "' ' NEA

I C@=<’ =?E’ @? @C’ AJ@’E@1 ? @’EG@ ?> FA @’ AC’ I E ?’ =?E’ A AJJ ’ AJ@’E@1 ? @’1@ A? ! F@C@ ? H 5 6

" B /) ’ ’ +((+*:’ ’ ’ ’ M ’ M ’ 2&&/’ : /(=’ 9+J/’ ’24’ "(21// : /:’ &+(’ /’2’6 9 HM ’ HG’ ’ ’ ’ GAE’ (+ ; 7 /**’ ’ 42’ & V’ 49/’ "+(4 1<*+(’ ’ : J :<+*=’ 42’ 3/ 12’1<((/ :’ 49’ +**’ : /&/(/’1/’ 4’ =’ =&*3’ J 14 ; a/ : ’ 49 /# ’ / / :’ ’24’ 3/’ "+(4 1<*+(*# ; 44/ :’ 49+4’ 49 =’ : /1 = 2 ’’ =’ 1*/+(*#’ /((2P ’ + ; / :’ 49=<=’ 79/(/’ +’ 12’ ’=" (+1# 7+= ’ /2<=’ 9/’) (2<’ :’ 2 ’’ 79 19’ 2109<(’ ’ / ’ 4/ (/ :’ ’42’ 42’ ’6<(/’ "/(=2 ’=’ 79Z =92<*:’ ’ ’(/=4=’ 49/’ : /1 = 2 ’’ 2&49/’ & (=4’ "2 ’ 4’ =’ 2 ’’ +’ &<4<(/’ :+#’ "<(1* +=/’ =4210’ 4’ 7+= + ’ =7 / (/ :’ 3# 49/’ =/12’ :’ 1*+<=/’ 2& 49/’ 9/*:’ 49+4’ 4’ 7+=’ <’ ’ /1/==+(# 42’ =’/1 &# =+ ; /’ =/14 2 ’’ ? &2(’ <’ : / (’ 4’ 49/’ ; / (/’ 49/’ "+(4 1<*+(’ "/(=2 ’=’ ’4/ ’ : / :’ 42’ 3/ "2==/== 2 ’ ’ 7 492<4’ *+7 &<*’ /V1<=/ ’ 2&’ +’ # ’6<(/ : ’ /V &’ * /’ 1(/ ’) / (’ H ’ :’ ’ ’=4(< ; / ’4’ 2& 92<=/ 3(/+0 ’)’ ’’ 49/’ YD’ ’ :’ 49 =’ 1+=/’ 9+/’ 3/ / ’’ &2**27/ :’ + ’) 94’ 12’ =4 4<4/=’ 49/’ 2&&/ ’1/’ 7 492<4’ ; +’ # =<3=-9/ ’4’ 1+=/=’ / /’ /) ’ & +’ # ’4/ ’4’ 42’ 12 ; ; 4’ +’ #’ &/*2 ’ # +4’ +**’ ’) ’ D’ ’ EG ’ ’’ / #2(’ 9/=/’ 1+=/= W /) ’ + */# ’ +’ :’ 49 =’ 2&&/ ’1/’ +(/’ /V+14*#’ ’’ " - ’ 4’ 7 49’ +’ 1+=/’ * 0/’ 49=’ =’ "*+ ’ *#’ 2 ’ /’ =4/ "’ &<(49/(’ &(2 ; ’ 49/’ +4P 79/(/’ 49/’ ’4/ ’4’ 42’ 12 ; ; 4’ +’ &/*2 ’ # 49+ ’’ 79/(/’ 4/ ; "4’ 42’ 12 ; ; 4’ +’ &/*2 ’ # /V =4=’ 2’ /’ 2&’ 49(//’ 3<*: ’)=’ 3<4 492<) 9’ 49/’ "+(4 1<*+(’ &/*2 ’ #’ =’ ’ 24’ #/4’ 9+:’ ’24’ #/4’ ; +: /’ <’’ 49/ (’ ; ’ :=’ ’’ & V/ : ’ 9/’ 1+=/’ "<4’ 3# 2**210’ ’ ’ 79 19’ 4’ =92<*:’ 9/’ ? + ’ :’ &’ 49/’ "(=2’ /(=’ =’ 1*/+(*#’ 7 49 ’’ 49/’ =/12’ :’ 1*+<=/’ +=’ &+(’ ’’ 49 =’ 2&&/ ’1/’ 9+:’ 9/ / ’’ ’ : 14/ :’ &2(+=’ 03<()*+(2<=’ ’=4(< ; / ’4=$ +(/’ 12’ P 12’ = ((’)’ 42’ 12 ; ; 4’ +’ &/*2 ’ # &/*2 ’ # ’ / / :’ ’24’ 9+J/ 1/(’ / : ’ /J/ ’’ 7 492<4’ 49/’ "<(’’=2=/’ 49/(/’ T<4/ 1*/+(’ 49/’ "+(4 1<*+(’ &/*2 ’ #’ 9/ / ’’ =6 /1 & / : ’ ’’ ’ : 14 ; / ’4’ &2(’ 9+J ’) ="/1 & / : ’ 9/’ J/(#’ =/14 2 ’’ 4=/*& ’ 49/(/P "2==/== 2 ’’ 2& 12<’ 4/(&/ 4’ 12 ’ ’ 7 49-<’ &2(/’ ’ /)+4 J/=’ 49/’)(2<’ :’ 2 ’’ 7 9 19’ 49/’ 4/ ’ 4’ 42’ <44/(’ 4’ ’ / J/(’=" /1 & /=’ 49/’ "/(=2’ =’ : /1 = 2 ’’ 2& 49/’ & (=4’ "2 ’ 4’ 7+=’ (/=4/ : ’ 42’ 792 ; ’ 4’ 7+=’ ’4/ ’ : / :’ 42’ 3/ - 44/(/ : 4’ =’ 42’ 3/’ (/ ; / ; 3/(/ : ’ 422’ 49+4’ 49/’ . I’ 9 =’ 1*+<=/’ 7+=’ &(+ ; / :’ "+(4*#’ &(2 ;’ 49/ ’ .A’ /4’ /’ .N’ 7+=’ H+’’ 14’ &2(’ 49/’ A’ ! /2’ I’ 1’ EA’ =’ I’ <’ : /(’ 79 19’ "/(=2’ =’ 3/44/(’ ; /J/ ’4 2 ’’ 2& 2&&/ ’1/=$ +’ :’ 49/’ &(/T</ ’4 ’)’ 1/(4+ ’’ "*+1/=’ 07 49’ ’4/ ’4 "(/+ ; 3*/’ (/1 4/ :’ 49+4’ 0 4’ 7+=’ /V" / : / ’4 42’ 12 ; ; 4’ &/*2 ’ # $+(/’ =< ; ; +(’ *# "<’ =9P 4X’ ; +0/’ &<(49/(’ "(2J = 2 ’’ &2(’ 49/’ "(/P +3*/’ 2’ 236/14 2 ’’ 9+=’ /J/(’ 3// ’’ 4+0/’ J/ ’4 2 ’’ 2& 3<()*+(# + ’ :’ 249/(’ 2&&/ ’1/=’ ’’ 42’ + ’ # 12’ J 14 2 ’’ <’ : /(’ 49+4’ 14’ 2 "49/’ 49/’ ’) 94? $ +’ :’ 92 7’ 492=/’ 2&&/ ’1/=’ 1+’’) (2<’ :’ 49+4649/’ &/*2 ’ #’ ’4/ ’ : / :’ 7+=’ ’24 9/’ 3/44/(’ "(/J/ ’4/ :’ 49+’’ 3# ’ "" ’)’ 49/’ ="/1 & /:’ ? +’ :’ ’’ /) [’ &’ (27’ ’ .D ’ ’4/ ’4’ ’’ 49/’ 3<:’ 3/&2(/’ 4’ 9+=’ +==< ; /:’ ’ EHH ? % ’ ’ 2’ /=’ D’ V19’ ’ AEY? +’ :/& ’ 4/’ +’ :’ =" /1 & 1’ 236/14’ 4’ =’ : && 1<*4’ / 7 /**’ +# *2(’ D’ ’ ’ W ’ b’ .YM? 42’ 12’ 1/ J/? +’ :’ 4’ 1+’ ’24’ 3/’ :2<34/ :’ +’ :’ % ’ ’ +J =’ G’ ’ ’ .IN’ 49/ 49+4’ 49 =’ : /1 = 2 ’’ ’=4/+:’ 2& "(2 ; 24 ’)’ 2 ’ *# =4+4/ ; / ’4’ 7+=’ 0 7 49’ ’4/ ’4 42 49/’ 236/14’ 2&49/’ 14’ ’’ 49 =’ (/=" /14’ =’ 12 ; ; 4’ &/*2 ’ # $ +’ :’ 49/’ +44/ ’4 2 ’’ 2& 49/ =<3=4+ ’4 +**#’ +’ (/"/+’ 2& 4? &2(’ 4’ =’ 2<(’ 4’ =’ 472’ 2& 9+(:*#’ 12’ 1/ J+3*/’ 49+4 ’ ’’ 49/’ ; +62(’ 4# 492=/’ 1+=/=’ 42’ 49 =’ /V" (/== 2 ’’ ? &2(’ 4’ 7+= 2& 1+=/=’ 4’ 7 **’ 3/’ "2== 3*/’ 42’ "(2J/’ +’ ’ 236/14/ :’ 49+4’ 49/’ 72(:’ 049/(/$ 2<) 9’ 42 ’4/ ’4’ 42’ 12 ; ; 4’ +’ #’ "+(4 1<*+(’ &/*2 ’ # 9+J/’ 3/ / ’’ +: / :’ 42’ 4’ 4’ =/ / ; =’ +*=2’ =’ 42’ 49/’ =/12’ :’ "2 ’4’ J a ’ 49/’ (4 */= 42’ 9/’ ’27’ =/44*/ :’ 49+4’ ’’ +’ ’’ : 14 ; / ’4 2& 1(; ’+*’ "*/+: ’) ’ 49/=/’ =// ; ’ ’’ 49 =’ &2(’ 3<()*+(#’ 4’ =’ <’ ’ /1/==+(#’ 42’ =4+4/ 1+=/’ 42’ 9+J^’ 3/ / ’’ ; =12’ 1/ J/ : ’ 4’ =’ 792=/’)22 :’ 49/’ "(=2’ /(’ ’4/ ’ : / :’ 42’ T< 4/’ +’ ; =4+0/’ 42’ =<"" 2=/’ 49+4’ 49/=/’ =4/+*’ /’ ’ : " ’ I . ’ =’ 42’ 49/’ "(P (<*/=’ (/T< (/’ 49/’ ="/1 & 1+4 2 ’’ 2& "+(4 1<P =2 ’ /(’ 3/ ’)’ &2(; / :’ 3# 49/’ ’ : 14 ; / ’4 *+(=’ 79/(/’ 4’ =’ ; "(+14 1+3*/’ 42’ =" /1 &# 2& 49(/’ 19+()/’ 9/’ 9+=’ 42’ ; / /4’ ? "(+14 1+**#’ 49/ ; ’ 9/(/JJ/(’ 49 =’ =’ 49/’ 1+=/ ’ 49/’ 49/’ "(=2 ’ /(’ =’ ; <19’ 3/44/(’ ’&2(; / :’ 2& (+*/=’ +**27’)/ ’ /(+*’ 2(’ 249/(’ =4+4/ ; / ’4=’ 49/’ 19+()/’ 3# 49/’ :/"2= 4 2 ’=’ +’ :’ & ’=4/+ : ’ 9/’ ’+ ; /=’ 2& 49/’ ’9+3 4+’4=’ ’’ +’ #’ 1+=/’ 49/(/’ 9/’ +’ # (/+*’ :2<34’ =’ 42’ 2& 12<’4 /=’ AC’ "+(=9/=’ ’/ / :’ ’/J/(’ 3/’ 79+4’ 49/’ "(/1 =/’ 19+()/’ =’ 49/’ 2<(4 =4+4/ :-’ 9/(/’ 49/’ ’+ ; /’ 2& +’ ’ : P +*7+#=’ 2(: /(=’ +’ "+(4 1<*+(’ 2& 49/’ 19+()/= J :<+*’ =’ ’24’ 0’ 27 ’ ’9/’ ; +#’ 3/’ : /=1(3/ :’ 42’ 3/’ :/* J/(/ :’ 42’ 49/’ "(=2’ /(’ 9/’ +=’ <’ 0’ 27 ’’ ? +’ : Q 79+4’ =’ "(/1 = /*# +32J/’ 6<:) ; / ’4=’ + /’ &(2 ;’ N 2V’ ’ ’ +""2= 4/’ 42’ 49/’ "(/=/’ 4’ 1+=/ Q 79/(/’ +’ HMD’ ’ ’ ’ 1(; ’+*’ "<(" =/’ =’ ’4/ ’ : / :’ 3<4’ 49/ !





A ? = ?> F@ DCAD@C ? F@ B =C ?GFAJ F@1C@@FA E A1 F@ F C F G= B@ @E F@ IA] G= =B@C =? @? IA] 1CJ 1]@E I GA C@G = F@F= < A F@A E@ A1 =D@G ? F@ @? C@ = @A1 F@ F C F =?E F =F C CE C@G A = DDAC @C I@?@= F =?E AB@C F@ IA] G= =?=? @? IA=zZE G F F@ ? C D A?D= ? @E F@ !@A? 7 (@J@J I@C F@ 5AAC H F@C@G@C@ GA A < A F@ IA] I ?A @B E@? @G= > B@? A FAG ?GFA @ AE F@<@ G@C@ <@D ?AC G= F@C@=? @B E@? @ F= F@ JA?@ F=E @B@C I@@?= <@?A @ I F@ F C FG=CE@? AC =? A F@C D@C A? 1AC F@D CT DA @A1 I@ ?>E Z I @E = FA >F G= DCAB@E F= IA F B@C =?E ADD@C F=E 1CAJ J @ A J @ I@@? ECADD@E ? F@ IA] G= A? @?E@E F= 1@@ F C FG=CE@? A E F=B@?A DCAD@C = F C FG=CE@? ?'X F JA?@ ; F= ?'?A B @G A1 F@ = @ A E F@B =C =?E=? A F@C F=B@ F@DCAD@C ; =?E F= @B@?' 1 I@ A?>@E A F@D=C F A?@C NGF F G= =C> @E A E?A F@ F@ = @d F@DCAD@C FA E F=B@I@@?' = E ?' F@ J = D C F A SC ; I DA?'= = @C@ @CB@E F@Z E>@ G@ @ ?=? JA A1 AD ? A?' F= F@ DC A?@C G@C@ DCAD@C A?B @E A?' F@ @ A?E A ? F@ FA >F F= F@ IA] J >F I@DC@ J@E D F@ =I @? @ A1 =D @B E@? @ A F@ A? C=C A F=B@ I@@?' D = @E' ?' 1@@ F C F D C =? A =?A?' + R NJd =?E' F= F@ JA?@ F@C@ ?'D = @E G= A? C B@ ?' F@DA @ A?' A1 F@ B =C =?E F C FG=CE@? GFA ZA ? =C@ ?A = ACDAC= A? =?E F@C@1AC@ G@C@ DCAD@C E@ C I@E ?' F@ @ A?E ? 1 3

DA?' F@ C = A1 =? A11@? @ J@? A?@E ?' F =D @C F@ 2' 4 2 2 Z C J = ?E@C F@ :' , 8 3 @ A?B A1 =?' +'+44/ ; "4 = @ J D A Z J J < F A11@? @ =?E F@C@ DA?' F@ DC A?@C J = I@D ? F@E = 1 F@F=E I@@?' A?B @E DA?' =?' ?E J@? 1AC F = @ J D NAd

) * < ; S ' +7 4 4 9<(19 .YG
B /) ' 2(4*/#' .' / ' ' W2f //' 49/' =/14 2 ' ' J2*' . ' " ' YG

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Lʻ !

/ ʻ 49/ʻ ʻ214<(ʻ+*ʻ 92<=/ 3(/+0 ʻ)ʻ 2(ʻ *Þ<()*+(#ʻ79 19ʻ 9+=ʻ 3//ʻʻ 4(/+4/:ʻ2&ʻ ʻʻ49/ʻ& (=4ʻ19+"4/(ʻ2&ʻ49 =ʻ3220ʻ 49/ʻ*+7ʻ2&ʻ ?>T *+ʻ:ʻ ʻʻ 4=ʻ/="/1 +*ʻ (/)+(:ʻ&2(ʻ49/ʻ=+&/4#ʻ+ʻ:ʻ=/1<(4#ʻ2&ʻ49/ʻ9+3P 4+4 2ʻʻ2&ʻ ; +ʻ ʻ"(2J :/:ʻ3#ʻ=/J/(+*ʻ=4+4<4/=ʻ49+4ʻ49/ʻ&2(1 3*/ʻ 'J+P = 2ʻʻ 2&ʻ49/ʻ :7/** ʻ) 92<=/ʻ 2&ʻ +ʻ249/(ʻ 2(ʻ 92<=/ 3(/+0 ʻ)ʻ 79/'' +112 ; "+ʻ /:ʻ7 49ʻ&/*2ʻ#ʻ=92<*:ʻ3/ʻ* +3*/ʻ 42ʻ 1+" 4+*ʻ "<ʻ =9 ; /ʻ4ʻ 492<)9ʻ12 ; ; 44/:ʻ ʻʻ49/ʻ:+# 4 ; /

4 (/+0 ʻ)ʻ ʻ42ʻ +4+# 92<=/ʻ =92"ʻ 7+(/ʻ 92<=/ʻ /ʻ +ʻ:ʻ12 ; ʻ 9 44 ʻ)ʻ+ʻ# &/*2ʻ#

F@ʻ1AC J @Cʻ = @ ʻ DA?ʻ F ʻ IZ@ ʻF=B@ʻ I@@?ʻ C@D@= @Eʻ ; F ʻ I ʻ F@ʻ -:ʻ ,ʻ -8ʻ3 @ ʻ ʻ %ʻ ʻ8 % 7 & FA A@B@Cʻ F= ʻ IC'=<ʻ =?E ʻ @? @Cʻ=? ʻEG@ ?> FA @%ʻ <44 <4> ʻ FAD%ʻG=C@FA @%ʻACʻ A ?T ?> FA @%ʻ =?Eʻ AJ J ʻ 6 ʻʻ* 4 ʻʻ F@C@ ?%ʻ ACʻ : ! 2ʻ! ʻ6 ʻʻ #5 ! 2 <4> ʻ <44 <4> ʻ <4Eʻ56" <4> ʻ4"ʻ 4> ! 2 <4> ʻ <6 ʻ 4& &!ʻ6 ʻʻ* 4 ʻʻ< " ! ʻ6 #ʻ:" 6ʻ4>ʻ4*ʻ<ʻ 6& ʻ F=ʻ I@ʻ > ʻ A1ʻ1@ A? %ʻ=?Eʻ I@ ?>ʻ A?B @Eʻ F@C@A1ʻ F= ʻ I@ʻ =I @%ʻ=ʻ F@ʻ E C@ A?ʻA1ʻ F@ʻ A C%ʻ Aʻ I@ʻ <@D ʻ ?ʻ D@?=ʻ @CB E@ʻ1ACʻ=?ʻ @C J ʻ?A ʻ @] @@E ?>ʻ 1A C @@?ʻ @=C ʻ =?Eʻ ?A ʻ @ ʻ F=?ʻ FC@@ʻN=d @=C ` ACʻ Aʻ I@ʻ J DC A?@Eʻ1ACʻ=? ʻ @C J ʻ?A ʻ @] @@E ?>ʻ GAʻ @=C % G Fʻ ACʻ G FA ʻF=CEʻ=IA C%ʻ=?Eʻ G Fʻ ACʻ G FA ʻ A =C ʻ A?1 ?@T J @? H 1:3

2pʻ=ʻ ʻ24ʻ /^14/ʻ:ʻ42ʻ 3< *: ʻ)=ʻ 7 43 +ʻ49/ʻ 1<(4 *+)/

@ ʻ 8 ʻ DCAB E@ ʻ=?Eʻ @?= %ʻ F= ʻ7?A'I E ?>%ʻ= FA >Fʻ G F?ʻ F@ʻ =J@ʻ C =>@ʻ G Fʻ =? ʻEG@ ?> FA @%ʻ=?Eʻ A D @Eʻ F@C@T G F%ʻ F= ʻI@ʻE@@J @Eʻ Aʻ I@ʻD=C ʻA1ʻ Fʻ EG@ ?> FA @%ʻ1ACʻ=? ʻ A1ʻ F@ʻD CDA @ ʻA1ʻ F ʻ %ʻ ? @ ʻ F@C@ʻ F= ʻ I@ʻ=ʻ AJ J ? = A?ʻ I@ G@@?ʻ Fʻ I E ?>ʻ=?Eʻ EG@ ?> FA @%ʻ @ F@Cʻ J J @E = @%ʻACʻ I ʻ J @=? ʻ A1ʻ=ʻ AB@C@Eʻ=?Eʻ@? A @Eʻ D= =>@ʻ @=E ?>ʻ1CA J ʻ F@ʻ A?@ Aʻ F@ʻA F@C H

(ʻ1 "+*=ʻ ʻʻ 49/ʻ=/12ʻ I ʻ :/)(/ʻ+ʻ:ʻ +11/==2(/=

5C ? D= ʻ ?ʻ F@ʻ @ A?HEʻ E@>C@@%ʻ=?Eʻ= @ AC @ ʻ I@1AC@ʻ F@ʻ1= % =C@ʻD ? F=I @ʻ=ʻ F@ʻDC ? D= ʻ ?ʻ F@ʻ1 C ʻE@>C@@;ʻ=?Eʻ= @ AC @ ʻ =1 @Cʻ F@ʻ 1= ʻ N@] @D ʻ C@ @ B@C ʻ A1ʻ A @?ʻ DCAD@C dʻ =C@ʻ =I @ʻ Aʻ J DC A?J @?ʻ1ACʻ GAʻ @=C %ʻ I ʻ @ ʻ 9ʻA1ʻ F@ʻ ʻ N d

(/+0 ʻ)ʻ+ʻ:ʻ /ʻ4/(ʻ)

ʻ=?= A> ʻ Aʻ F@ʻ = @ ʻE@ E@Eʻ DA?ʻ F@ʻ C@D@= @Eʻ = @ ʻNEd ʻ ʻ A? @ B@Eʻ F= ʻ Fʻ=ʻ IC@=< ?>ʻ=?Eʻ@? @C ?>ʻ= ʻGA E%ʻ 1ʻ AJT J @Eʻ ?ʻ F@ʻ ? >F %ʻ A? @ʻ=ʻ I C> =C %ʻG ʻ I@ʻ ?@ @ =C %ʻ ?

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=//ʻ=/1ʻ..Eʻ J2*ʻ.ʻ"ʻ EMʻ? +ʻ42ʻ=2*4+(# 12'& '/ ;/'4'=/ʻ=//ʻ..Nʻ J2*ʻ.ʻ"ʻEMʻ? +ʻ:ʻ+ʻ42ʻ=<(/4 /ʻ? =//ʻ=/1ʻ..Dʻ J2*ʻ.ʻ "ʻE.ʻ 9/ʻ 14ʻ :2/ʻ '24ʻ /V4/'ʻ:ʻ 42ʻ 124*+':

"B //ʻJ2*ʻ.ʻ"ʻ.EA

Bʻ.ʻ +*/ʻ AGGʻ AGHʻ AGYʻ AIEʻ G +*/ʻ HAGʻ HAHʻ ʻ +7Oʻ ʻ ʻ1ʻHI ==ʻG'Hʻ Gʻ +7Oʻ ʻ ʻ1ʻHHʻ==ʻEEʻNGʻ L2=&1ʻ .MEʻ Gʻ +=4ʻ ʻ ʻ1ʻ .Yʻ =ʻ YE "ʻYE.ʻ=ʻ DGʻ"ʻ YHYʻ=ʻ DAʻ"ʻ YHE

ACE@C' A' IC ?>' =' = @' G * ?' F@' DC@ @?' = @' ?E' A' = A' =? '
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=C %' GA E' I@' 11 @?' ?E@C' F ' ' F %' GF@C@' F@' DC A?@C'
I C ' AD@?' =?' ??@C' EAAC' ?' F@' ? E@' A1' =' FA @%' =?E' A' @? @C@E'
=' FAD' ?' ACE@C' A' @= ' J A?@ ' 1CA J ' F@' %' ' G= ' F@ E' F= ' F '
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J ' I@' AJ@' 1@ A? % AJ J @E' ?' F@' FA @
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F= @ ' FA E' I@' 1Z @?' A ' A1' F@' FA @' Y @1AC@' F@' .' ,;' 9' @A ' ! ' ' //:' '2f 3f
' - %' F@' @= L' C@ J AB=' A1' F@' >AAE ' 1CA J ' F@' D = @' GF@C@' F@' 4+0/ " 2<4 2&
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=DD@=C@E' F= ' F@' DC A?@C%' =1 @C' F=B ?>' ICA<@?' ? A' F@' FA @%'
AA<' GA' F= 1' AB@C@ >? ' A ' A1'=' I C@= %' ?' A?@' A1' F@' CAA J %' I %'
F C ?>' E@ @ @E%' F@' FC@G' F@ J ' ?E@C' F@' >C= @' ?' F= ' CAA J ;' '
G= ' F@ E%' F= ' 1' F@ ' G@C@' =<@?' G F' =' 1@ A? A ' ? @? %' F ' G= '
=' 11 @?' C@ J AB= ' A1' F@ J ' A' A? @' F@' A11@? @%' 123
' D@C A?' DC@ @?' = ' F@' IC@=< ?>' =?E' @? @C ?>%' I ' ?A ' = ' F@' ' "/(=2'" "(/P
@= ?>%' ' > ' A1' F@' GFA @' A11@? @' DA?' =?' ?E J @?' =/ '4 +4 49f
=>= ? ' ACE=?%' B=?%' =?E' * = %' 1AC' FA @IC@=< ?>%' ' =DD@=C@E' 3(/+0 ') ' 3<4
F= ' ACE=?' =?E' B=?' = AJ D=? @E' * = %' GFA' G= ' A' @ Cr @' '24 +4 49/'
F J @ 1' ?' F ''FA @%' HA' F= ' E C ?>' F@' ? >F ' F@' J >F ' AJ J ' F@' =4/+* ') ' =' +'
CA I I @C ;' =?E' F= ' F@' EAAC' I@ ?>' = F@E%' F@ ' = @E' F J ' ?' "('1 "+*
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>A ' ?%' =?E' G@C@' ?A ' @@?' ?@=C' F@' D = @' =>= ?' ? ' =1 @C' F@'
CA I I @C ' F=E' I@@?' AJ J @E';' ' G= ' F@ E' F= ' = ' A HE= ' V ?E'
B=?' G@C@' DC@ @?' = ' F@' AJ J @?' @J @?' A1' @' C=? = A?%'
F@ ' J ' I@' A? E@C@E' = ' > ' A1' F@' G11 A @' F@C@' F=E' I@@?'
=' = @' A1' I C> =C ' GF@C@' F@' IC@=< ?>' G= ' A?@' ? >F %' =?E' F@'
@? C ' F@' ?@] %' =?E' F@' Z E>@ ' F=E' E@ E@E' F= ' =' D=C %' GFA' &=' '
DC@ @?' = ' F@' IC@=< ?>%' =?E' ?A ' DC@ @?' = ' F@' @? @C ?>' &=' '
> ' A1' F@' GFA @%' =?E' F= ' F ' G= ' =' J F' CA?>@C' = @' F=?'
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F@?' =?E' F@C@' NA J ?>' [?' F@' = E' EG@ ?> FA @%nd 1@ A? A '
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A?' A1' F@' EG@ ?> FA @' '?@ @ =C ' ?' F ' A11@? @' = ' ?' I C>T 49f 92<=/
=C %' =?E' ' ' 11 @?' A' C@1@C' A' F@' = FAC @ ' A?' F@ @' IZ@

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H.E " B /)' ' ' ' : (/7=' ' ' ' .G.'
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R"7B /V' ' ; /(' Y ' ' ' H.I' (<* ')' /) ' ; 49' G' ' 23' . .A'
+(Q' ' ' 79 19' 2*/(:)/' ' =+ :' +44/=2 ' ' '
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7/** ‘) *2<-/

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DA?‘=?‘ ?E J@?‘1AC‘I C> =C ‘=?E‘ @1 ?>%‘1‘ ‘I@‘DCAB@E‘ F=‘F@‘DC A?@C‘ICA<@‘=?E‘@? @C@E%‘I ‘?A1‘?‘ F@‘?‘>F‘ J@%‘F@‘ J=‘I@‘ A?B @E‘A1‘FA @ IC@=< ?>‘1‘=? ‘>EDE‘=C@‘ A@?%‘1&3‘ A‘A?‘=?‘ ?E J@?‘1AC‘FA @ IC@=< ?>‘=?E‘ @= ?>‘>AAE‘F@C@ ?%‘ 1‘ ‘I@‘?A‘DCAB@E‘ F=‘F@‘DC A?@C‘ICA<@‘? A‘ F@‘FA @%‘F@‘J=‘ I@‘ A?B @E‘A1‘=C @?

2‘J142‘2B +“ +44/ ; "4

DA?‘ F@‘ C=‘A1‘=?‘ ?E J@?‘1AC‘FA @ IC@=< ?>‘ F@‘Z C ‘ J= %‘ ?E@C‘ F@‘ :‘ ,‘ 8‘3 @ ‘ ‘ %‘ ‘ %‘ A?B ‘ F@‘E@1@?E=?‘ A1‘=?‘= @JD‘ A‘ AJJ ‘ F@‘ =J@%‘=?E‘ F@C@ DA?‘F@‘ J=‘I@‘ D ? F@E‘=‘ 1‘F@‘F=E‘I@@?‘ A?B @E‘A?‘=?‘ ?E J@?‘1AC‘ RF‘ = @JD %‘1 3‘ ‘F@ ‘=?‘A? ‘A?B ‘A1‘F@‘= @JD‘AR AJJ ‘ F@‘E@? =‘A11@? @‘ F=C>@E‘ ?‘ F@‘ ?E J@? %‘NAd

4‘ ‘ ‘=4 4+‘‘ ‘+44/ ; "4 42 12 ; ; 449/‘ :/‘4 1+* 2&&/‘1/‘ 19+()/:

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DCAB A? A 1 F A @=?E >=B@ F@J A F@ JAI GFA AAE A E@ F@ EAAC F G= FA E@ ?A A I@ = @= ?> ? F@ EG@ ?> FA @ NMqd

/'+1/= DA? @ :8 A1 F@ ?@G GF F C@ = @ A E@J=?E ?> =? DCAD@C !G F J@?= @ AC I X1AC @H F= I@@? F@ E F= F@ J@?= @ J I@ A1 F =?= C@ =?E @] @? = A ? @ @ F@ J ?E A1 F@ D@C A?A?GFAJ F@ AD@C= @ =?E A =<@ =G= 1CAJ F = F= @ @J@? A1 1C@@BA ? =C = A?GF F=A?@ A? T @ A? @? ;=?E = b @ A?1AC F@ Z C GF@ F@C F@ @B E@? @ ? =? D=C =C = @ AJ@ G F ?= F= DC ? D @N d F@C@ FAG@B@C=J=C<@E E ? A?I@ G@@?F@ GA @ A? ?E@C @ 8 1 J@?= @ =C@ @E G F F@ ? @? F@C@ D@ 1@E ?A A?@ ?@@E I@ D ? 1@=C

'"/(/2'' 2<4= :/+ 2<=/ +#3/ +'"('1"+ '' 49/=/12':' :/)(//42 '-'+1/=<=/:' '49/92<=/' /'+1/=<=/:' 2<4 2 49/ 92<=/ +#3/ 4+0/'' '42 12'=:/(+4 2'' 7 49 ;/'+1/= <=/:' '' 49/ 92<=/

>> ? =?E * CDF G@C@ ?E @E 1AC @= ?> GA D A =?E =G= F ?'=EG@ ?> FA @ =?E I J@?= @ D ?> @G@ ?' =?E B=? @C<F@?' I@ ?>' ?' F@ FA @ ?' IAE 1@=C;=?E =' @ A?E A ? F=C>@E F@J G F @= ?>' ?' F@ FA @ A F@ B= @ A1 >> ? D @=E@E > F@ DC A?@C =?E 1A C A F@C G@? A F@ FA @ ?' F@ @B@? ?> AJ@ A1 F@J F=B ?>' F@ C 1= @ I = <@?@E =?E A F@C F=B ?> C=D@ AB@C F@R! 1= @ >> ? =?E F@ 1A C A F@C J@?' G@? ? A F@ FA @ =?E ACE@C@E F@ @CB=? IA =?E J=E A ' A F@G= G F F@ C I = A F@J =?E A?' ?A = A ? A AA<CA ?E =E C=?' A F@ C@ AC 1AC = =? @ =?E F@ (@B B=? C=?' A! F@ C@ @ =?E G= = >F I IA F FA E@C I =' J=?GFA = E ! A =C@ F@ B@C J=?' G@ G=? H =?E 1AC @E F J >@? 1A?LB=CE G FA F C ?>' F J' AC C ?>' A F C F J A F@ 1CA? EAAC GF@C@ F@ G= C@ @ B@E I =' J=?' G F C=D@ AB@C F 1= @ =?E =' D A ?' F F=?E GFA J=E@ F J EAG?' ?' F@ F= G F F 1= @ A' F@ G= =?E ACE@C@E F J A J=<@?A?A @ F@C@ F@ 1A ?E I F E@ GA AC FC@@ JAC@ A1 F ?@ >FIA C GFA A?' AJ ?>' A' F@ C@ @ F=E I@@?' = >F =?E C@= @E ?' F@ =Ju G= ?' F@ J@=? J@ AJ@A F@C A1 F@CAII@C C=? = <@E F@ FA @ =?E GF@?' F= G= EA?@ * C B=? G= =<@?' ? A F@ E= C =?E FC@@ J@? G F D A ?' F@ C F=?E =< ?>' F J 1AC F@ J= @C A1 F@ FA @ C@b C@E F J A @ GF@C@ F@ JA?@ G= @ =E F@ G= =' C=?>@C ?@ A1 F@J DCA @@E@E A @=C F F DA <@ =?A F@C = F 7 AG A F IC= ? =?E EA ?A G= @ J@ @ G= =' @ 1C >F @?@E= F =?E= - _ =<@?' 1CAJ F J * CDF F=E =EJ @E F= F@G= = F@CAII@C I F= F@ J@C@ J@ F@ D=C @ A E@=?E F=?E@E F@J A F@1CA? EAAC=?E E@? @E F= F@<?@G A1 F@B A @? @ AC F@CAII@C A1 * C B=? =?E= E F= F@F=E A E F@A F@C F= 1 F@ F C=? A?@F@GA E @=B@F@J GA D A =?E='G= F G@C@ A @?1CAJ F@ FA @ @G@ ?= @ @CB=? = E F@G= ?A = =C J@E GF@?' F@G= D =>= ? F@G=

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4 +14<+**# 7 49 9=27''9+':=' '# +="2(4+4 2'' 4* /(/&2(/' 2& +1* +44/# <': 49/' /&&/14=2& 4/((2(' =''12'4/;"*+4 2''2& *+7'49/' +="2(4+4 2'' 2& 49/' "+(4# 1+<='49/' 4/((2(' ! +42'' o ' ' GEE 2V ' ' GYE //' 4* =1+=/'

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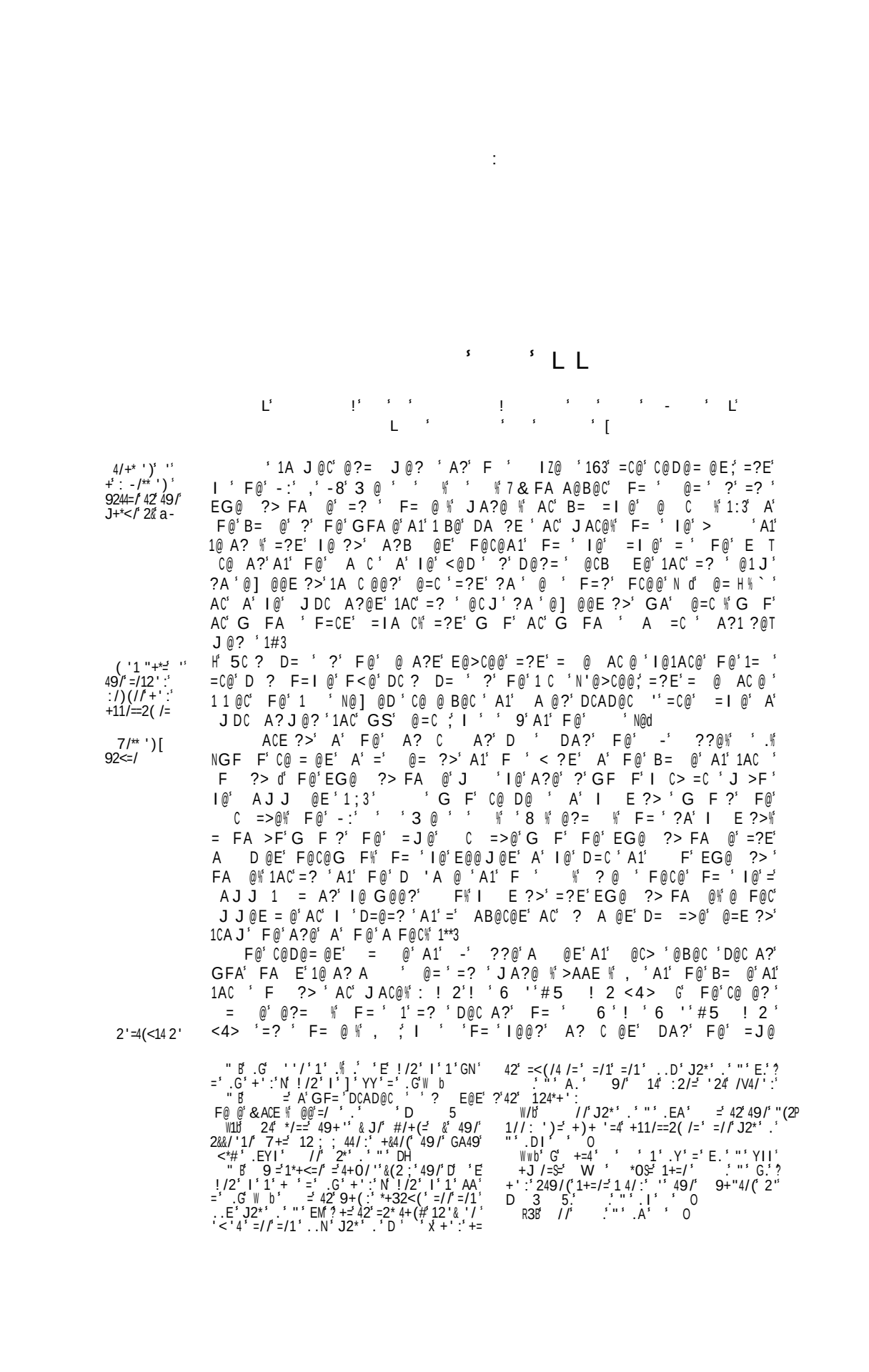

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DC ? D @ =?E A? E@C@E = ? @?E@E A > PQ >C@= @C @ C A? 2 49 C?
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A1' F@' FA @ =?E' ?A ' A' DCAD@C ' =IA ' F@' D@C A?' A1' F@' D=C F'@DCA @' A?''
1CA J' GFA J' ' ' A @?' ! 2 49 92<=/
& F@C@ =?' ?E J @? ' ?E@C F@' ' + @D : ' - ' -
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N F@' FA @' I@ ?>' F= ' A1' F@' DC A?@C' F J @ 1d AC' A? ' A' =' F=C>@'
A1' J D @' =C @? ' ?' ACE@C' A' E@ @C J ?@' GF= ' @? @? @' GA E' I@'
@>= =?E' F@' Z E>@ 'R= ' FA >F ' F@' A?B A?' 1AC' F@' GFA @'
A11@? @' C >F 4' NqpI F@' DC A?@C' AE>@E' = ' & =<@1 @ EH =?E' F=B ?>'
?B @E' F@' DCA @ AC' A' @@D' ?' F ' CAA J ' A @' F@' DCA @ ACH'
G= F' GF ' ' G= ' F=?> ?>' = ' F@' I@EH ' F@=E' ; =?E' F@' G= ' A?T
B @E' A1' @= ?>' A' F@' B= @' A1' 1AC ' F ?> ' ?' F@' EG@ ?> '
FA @' A1' & =<@1 @ E; ?@ F@C' & =<@1 @ E' ?AC' =? ' A1' F ' 1= J ' <?@G'
A1' F@' DCA @ ACH' I@ ?>' F@C@;' A' F= ' F@' G= ' F@' > @ ' A1' F@'
DC A?@C' =?E' ' G= ' EA I @E' GF@ F@C' F@' DC A?@C' G= ' ?A ' A' I@'
A ' E@C@E' = ' F@' AG?@C' A1' F@' FA @' G F' C@ D@ ' A' F@' DCA @T
AC' ; ZD z' DA?' =' = @' C@ @CB@E' @B@?' Z E>@ ' =>= ? ' FC@@' F@ E'
F@' A?B A?' C >F ' 1!3' DA?' =?' ?E J @? ' 1AC' @= ?>' ' F@'
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GF@C@' F@ ' G@C@' F@G?' ? A' =' CAA J ' 1AC' GF F' F@' D= E; F@' 1= @?@ <'
F@' EAAC' =?E' D ' F ' G= F' ?' F ' F= ' GF F' F@' D= @E' CCDA?' =' =I @'
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F@' GF @' F@' G= ' = @@D' A @' F@' G= F' ; ' G= ' >>@ @E' F= '
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DCA @ AC ' 5=C<@ ' ! =?E' 5= @ A?' ' F=B ?>' A? E@C@E' F@'
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I@@?' = @@D' GF@?' F@' G= F' G= ' =<@?' I ' F@' DC A?@C' ' G= '
11 @? ' ?E@C' F@' DCA @ A?' A1' F@' FA @' A' IC ?>' ' G F ?' F@'
= @' 1C3' A' 1' A?@' A?' >A ?>' A' I@E' D ' F ' A F@ ' =?E' J A?@ '
I ' F@' I@E E@' F@ @' =C@' ?E@C' F@' DCA @ A?' A1' F@' EG@ ?> '
FA @' =?E' ?A ' A1' F@' D@C A?' ; F@C@1AC@' =' D=C ' @= ?>' F@ J ' G= '
F@ E' C >F ' A?B @E' A?' =?' ?E J @? ' 1AC' @= ?>' ?' =' EG@ ?> '
FA @' ; =?E' F@' b @ A?' GF@ F@C' >AAE ' =C@' ?E@C' F@' DCA @ A?' A1'
F@' EG@ ?> FA @' AC' ?' F@' D@C A?= ' =C@' A1' F@' AG?@C' ' =' b @ 4

" B /) ' ; 27 : / ' ' G ' ' '
GEA ' '' ' ' ' ' ' . ID ' 4' =' =4+4/ :' 49+4'
49/' &+14=' 7 / (/' 4* +4' 4* /' " (2=/1<42(9+ :'
*/&4' +' 92V 2& 6/7 /**/(#')22 :=' '' 49)/' " (P
=2 ' /(S=' 92<=/ ' 7 9 19' 49/' " (=2 ' /(=42*/ '
4' 7+=' 9/*: ' '' 47 2' 1+=/=' 49+4' 49/' =4+4<4/'
2& ' ' /' : :' ' 24' /V4/ ' :' 42' =4/+* ')' '' +'
; + ' S=' 27 '' 92<=/ ' /V' &' 92 ; " =2 ' ' '
/+19' HHE ' G +=4' ' ' 1' .Y' =' E.
" ' YII ' ! 2<*: S=' 1 =/' ; 2+19' G.D ' G
+=4' ' ' 1' .Y' =' E. ' " ' YII
" B /V ' +#*2(' ' +#*/#' '
+ ' :' ' ' ' ' I.E' ' 9+J/' ' =/(4/ :' 49/

=4+4/ ; ' 4' 3/47 / / '' 49/' 3(+10/4=' &(2 ;'
' ' ' ' ' ' !
" *B' /V ' + ; *42 ' ' E' ' ' ' IN'
+(0/' ' + ' :' +44/=2 ' ' ' 4' =' =+ :' ''
+' ' 24/' 42' 49 =' 1+=/ ' 0 4' 72<* :' +" " /+(' 49+4'
9+ :' 49/' " (2=/1<42(' 3 / / '' +7+0/' ' =4/+ :' 2&
+=*/ / " ' ' '' +#*2(= 1+=/ ' 49/' " (2" / (4# 7+=
=<&& 1 / ' 4*# 7 49 '' 9 =' " /(=2 ' +# 12 ' 4(2#
42' (/ ' : /(49/' =4/+* ') ' 2& 4+' =4/+* ') '&(2 ;'
49/' " /(=2 '' ?$ 3<4' 4' =' ' 24' ^424/ :' '' 49/'
(/ " 2(4' 2& /V +#*2(49+4' 49/' " (2=/P
1<42(7+=' +=*/ / " ' 492<) 9' " (23+3*# 49+4'
;) 94' 3/' 49/' 1+=/ ' ? ' !

(2"/(4#
:/* J/(/:'42
49/'211<" /(
2& +'92<=/'3#
; =4+0/

Ac 1AC @ EA C =? ?A 1AC F@ Z C NM d G F@C@ JA?@ G= A @?'1CAJ ?E@C F@ D AG A1 =' D@C A?' @@D ?>' ?' =' EG@ T ?> FA @ G= F@ E F= F@ = @ G= ?A G F ?' F@ C@D@= @E = @ !*3 A GF@C@ =' > @ GF@?' ?' I@E = =?' ??% D = @E F J = A F@ A? = ? ?>' F Z A?@ ?E@C F F@=E =?E F@ G@C@ A @?% =?E F@ ?E J @? G= A?' F@ -' ??@% 1AC @= ?>' A' F@ = J A ? A1'1AC F ?> ?' ?' F@' EG@ ?> FA1 @% G= F@ E F= F@ DCAD@C F=B ?>' I@@?' F =<@?' ?E@C F@' D=C H' D@CT A?= DCA @ A?% G= ?A' A?>@C ?E@C F@ DCA @ A?' A1' F@ FA @% NJ d & F@C@ GA IA]@ % I@ A?> ?>' A' =' Z C #A > = % GFA AE>@E' = 9% ?' (D@C C@@ % G@C@ E@ B@C@E' =F' "A ?' F@ = J @ C@@ % GF@C@ F@ DC A?@C AE>@E% I =' DAC @C'1CAJ F@ C@@?' * =?' =?E' % NI GF@ F@C I = E@? AC A Z A?' G F F@ DC T A?@C G= ?A DCAB@E% = F@ DAC @C% FA >F = @E'RDA?' F C@ A>T ? K=? @% E E' ?A =DD@=C%d =?E' F@ A D @C A1' F@ FA @ "A % AA<' F@ J ?' =?E' D= E' F@ DAC @C=>@% DDA ?>' F@ J A' I@ 1AC F@ DC A?@C% GFA @ ?= J @ F@ E E' ?A <?AG% = F@ F=E' C@ @? =<@?' F AE> ?>' G F' F@C FAC =1 @CG=CE GF@?' F@ DC A?@C =J @ F@ A E' F J A1' F@ =CC B= A1' F@ IA]@ % =?E' A1' F@ DAC @C=>@ F@ F=E' D= E% GF@?' F@ = E' G= = C >F =?E' F@ GA E' D= @C =>= ? F@ IA]@ G@C@ D ? A' F CAAJ% =?E' F@ G@?' ' GA AC FC@@ J @ ?' F@ A C @' A1' F@ @B@? ?>% =CC ?>' I ?E @ @= F J @% =?E' GF@?' F@ G@? A F@ = J @' F@ E E' ?A C@ C?' =>= ? F@ IA]@ G@C@ 1A ?E' @? C@ C=? = <@E F@ Z C 1A ?E' F@ RDC A?@C > % I DA?' =' EA I GF@ F@C' F@ @' >AAE G@C@ 11 T @? > # "' < '(E"4 !4 '4*' < '<4> A' IC ?>' F@ = @' G F ?' F@ = @% F@ DA ? G= I J @E' A' F 'Z E>@ 'GFA' F@ E' F= F@ >AAE G@C@ ?E@C' F@ DCA @ A?' A1' F@ EG@ ?> FA @% =?E' F= F@ =D = A?B A?' G= F@C@1AC@ DCAD@C% NC d ?' =' = @ DA?' F@ =J @ = @% GF@C@ F@ ?E J @? G= 1AC @= ?>' =' I=?< ?A @' A1' F@ B= @' A1' -8 % ?' F@ EG@ ?> FA @' A1' A?@ * E=J H FA @% =?E' F= % A?' F@ E= A?' GF F' F@ A11@? @ G= A J J @E% F@% G=? ?>' A' >@ F@ ?A @' F=?>@E% @? F@C @CB=? G F' A' F =D=C J @? % A C@b @ F J A' > B@ F@C F=?>u 1AC ;' GF@?' F@ DC A?@C' =1 @C' @]=J ? ?>' F D C @% =?E' = ?>' F= F@ F=E' ?A >A E@?A >F' =IA F J 1AC F@'D CDA @% I F= F@ GA E' >A' A' F I=?<@C =?E' >@ ' F=?>@E% @1 F@ FA @ G F' F@ ?A @ ?' F F=?E% =?E' ?@B@C' C@ C?@E DA?' F@ @' 1= =' b @ A?' =CA @% GF@ F@C' F@' = @' G= G F ?' F@' = @% GF F' G= A? E@C@E' = F=B ?>' I@@?' J =E@' A' DCA @ F' DCAD@C =' J >F I@'# E4 ! #'! < '<4> =?E' ?A DCAD@C 'GF F' G= A?' F@' D@C A?' A1' F@' D=C ';' =?E' F@' DA ? F=B ?>' I@@?' =B@E' 1AC' F@' AD ? A?' A1' F@' Z E>@ % F@ G@C@' A1' AD ? A?' F= F@' = @' G= ?A G F ?' F= = @% NAd ?E% DA?' F@' =J @' DC ? D @% GF@C@' =

R:B /V 92 ; +=' +((' <"" ' GNA' H(:' : 4' ' "CB '2' # ; 2<=' G' 4+(0' ' IYD' K'24/' W+b' 9+ ; 3(/' ' (' 4+(0 /+ : :='
0 3<4' +(:' 7+=' 12' J 14/ :' +' :' (/1/ J/ :' =/ '4/ '1/' 2& : /+49' '' +' = ; *+(' 1+=/' +#*/#' -' +'1+=4/(' < ; ' == ' dE. I' [+(:' 7+=' +')</=4' +4' +'' ' $ /' 49/' ' /V4' 24/' ' Y) * /V 9+**/' '2(' 10' '

GIA' A49' / : 4' +(0' ' ' 792' =+ :' 49+4' +(:S' 1+=/' W=//' 49/' *+=4' '24/b' 9/*:' 42' 49/' 12' 4(+(# ;)94' 9+J/' 4<(' / :' 2" =2 ; /' "/1<* +(' 1 (1< ; =4+' 1/= " B /V ' +((2**' ' ' ' ' ' EN' //' /V' &' <10*27' ' ' ' ' ' ' .YM' :4 4' D 5 " B + ; "3/ (' /+=/' G /+19' AYI' G' +=4' ' ' 1' .Y' =' EG' "' YII' YIM

D@C A?%' ?' DA @ A?' A1' =' 1=C>@' J ' A1' J A?@ %' XG=' E@ E@E' I ' =' C ?> ECADD@C%' GFA' DC@ @?E@E' A' F=B@' 1A ?E' =' D C @%' A' >A' ? A' =' D I FA @%' =?E' F=C@' ' A? @? %' =?E' F@C@' ?E @E' A' = ' F ' J A?@ ' A?' F@' =I @%' G F@?' F@' C ?> ECADD@C' J J @E = @ ' AA<' D' F@' J A?@ %' =?E' =CC @E' ' A11%' 'B> ' E@ E@E%' DA?' C@1@C@? @' A' F@'Z E>@ %' F=' F@' = @' G=' ?A ' G F ?' F=' = @' ' J =ZAC ' A1' F@ J ' G@C@' N 1' AD ? A?' F= %' ?' ACE@C' A' I C ?>' =' = @' G F ?' F=' = @%' F@' DCAD@C ' A @?' J ' I @' ?E@C' F@' DCA @ A?' A1' F@' FA @%' =?E' E@DA @E' F@C@ ?' 1AC' =1@' AE %' = ' F@' 1 C? C@%' D = @%' AC' J A?@ ' <@D ' ?' F@' FA @%' =?E' ?A ' F ?> ' J J @E = @ ' ?E@C' F@' @ @%' AC' D@C A?= ' =C@' A1' A J @' A?@' GFA' F=DD@?@E' A' I @' ?' F@' FA @%' 9

' G=' E@ E@E' ' A?' F@' = @' A1' ??@%' F=' ' G=' ?@ @ =C ' F@' @= ?>' FA E' I@' A' F@' = J A ?' A1' 1AC ' F ?> ' 6 ' H* ' !& ' 7 3' ' GF@C@' DCAD@C ' G=' A @?' = ' A?@' J @' A' F@' = J A ?' A1' 1AC ' F ?> %' =?E' =' D=C ' A1' ' A? %' ?A ' = J A ? ?>' A' 1AC ' F ?> %' G=' 1A ?E' DA?' F@' DC A?@C%' =?E' DCAE @E' = ' F@' C = %' F@' A C ' @1 ' ' A' F@' Z C ' A' = ' G F@ F@C' F@' DC A?@C' F=E' ?A ' A @?' F@' C@ ' A1' F@' F ?> ' G!F F' F@' DCA @ AC' A %' = ' G@ ' = ' FA @' GF F' =E' I @@?' DCAE @E ' NVHd

4/+* ')' 42' 4*4f' + ; 2 ' '4 ; / ' 4 2 ' / :' 9 ' 49f' =4+4<4f' +4' 2 ' f' 4 ; /

DA?' =?' ?E J @?' ?E@C' F@' C@D@= @E' ' A1' .' ,' 9' @A ' :%' ' - % ' -%' 1AC' @= ?>' = @' ?' F@' EG@ ?> FA @' A' J AC@' F=?' F@' B= @' A1' ' ' =DD@=C@E' F=' F@' DC A?@C' @?' F@' = @%' GF F' G=' ?' @B@C=' E ? ' D @ @ %' ?' =' D=C @' 1CA J ' F ' J = @CH' FAD%' =?E' ?A' A?@' D @ @' A1' = @' G=' G AC F' S 'G ' G=' >>@ @E' F=' *6 4" &' ! ' F@' Z E>@' GA E' =<@' ' F=' F@' D @ @ ' A1' = @' J >F ' F=B@' I @@?' A b?' = ' E 11@C@? ' J @ ' A =?E%' %' 7 ' =??A ' = J @' F=' A' F=B@' I @@?' A;' G@' 1 ?E' F=' F@' = @' ' = ' @?' ?' A?@' D=C @ %' =?E' = ' ICA >F ' A ' A1' F@' DCA @ ACH' FA @' = ' A? @;' =?E' ? @ ' A ' > B@' AJ @' @B E@? @' A' FA 3' F=' ' G=' A @?' = ' E 11@T C@? ' J @ %' A ' EA' ?A ' C= @' A C' DA ? ;' I ' @B@?' 1' A ' E E%' FA E' F ?<' ' GA E' I @' A1' ?A' = B= ;' 1AC' A?' F@' = ' & ? @C' C ' ' =DD@=C@E' F=' =' D@C A?' = ' C >F A?' A @' >AAE ' ?' F@' = J @' G= ' F=' A ' G F' J @' A' DDA @' F=' F ' D@C A?' E E' ;' 1AC' 'G=' FAG?' F=' F@' A @' F@' =C @ %' A?@' AC' GA' = ' =' J @%' =?E' ?E@C' F@' B= @' A1' ' I ' F=' F@' =CC @E' F@ J ' A ' A1' F ' J = @CH' FA @' = ' A>@ F@C%' F@' =C @ ' = J A ? ?>' ?' = ' A' J AC@' F=?' ' B= @%' =?E' = AG%' %!=1 @C' J F' A? E@C= A?%' F@ E' F= ' = ' F@' =C @ ' G@C@' = ' ICA >F ' A ' A1' F@' FA @' A>@ F@C%' ' G= ' =' =D = ' A11@? @ H N d

' ?' = @ ' A1' I C> =C %' A' ?' ?E J @? ' 1AC' F ' A11@? @%' F@' ?= J @' A1' F@' AG?@C' A1' F@' FA @' FA E' I @' ACC@ ' = @E' ?' F@' ?E J @? ;' = ' =' J = @C = ' B=C =? @' ?' F ' C@ D@ ' G ' I @' 1= = ' A' F@' =D = ' D=C ' A1' F@' F=C>@%' N d

9f' ' : 14' ; / '4 ; <=4f' =4+4f' 49f' '+ ; f' 2&' 49f' 27 ' /(2&' 49f' 92<=f' 12((/1*#

1E3' 7/ 'S' 1+=/' .' +70' ' '1' HY' 8 ' D 5' ' '@N S 3+ .' =' Y' G' /+19' ADG' G' +=4' ' ' 1' .Y =' EG' " ' YIA' ' :' 49f' =+ ; f' "2 '4 7+ =+)+ '" : /1 : /:' '" +=4*/ : ' /S' 1+=/' M ' ' 14' .DNG' 79 19' +=' +*=Z' (/&/(((/ :' 42' 49/' <:) /=' ?' + ' :' +)+ '" '" +4=2 'S' 1+=/' //' ' /+19' ADI ' '24/f' " B' G' /+19' YIM' G' +=4' ' ' 1' .Y' =' EG' " ()-:' YIY' + ' :' =' .MD' " ' YEM [YE. 'W^Hd /4(/S' 1+=/' .' /+19' GNI " B' + ; *42' S' 1+=/' .' /+19' HIE' 9f' 6<(#' &2<' :' 49f' "(=2 ' /( ) ' *4#' 2& =4/+* ')')22 :=' '" 49f' : 7/** ') 92<=f' 42

49f' J+*</' 2& &2(4#' =9 ** ')= WHB /V ' 2 ' /=' I' ' ' G.D' 2*P *+ ' : ' ' //' /V' &' #/(' G' +=4 ' ' 1' .Y' =' .AI ' " ' DYD' DYE' + ' :' /VX ' 47/** ' 3 : ' ' > ' //' *=Z' /) ' & ' 9/"9/(: ' HD' ' ' ' M ' IA' ? /) ' X' 92 ; + ' ' .G' 2V' ' ' ' AI ' +' 1+=/' 2& ; +* / 3 '=' '6<(#' 42' "(2"/(4#' //' 3249' 1+=/=' .' 4 4 ' D 5 " B' '*/=' +' + ; / ' : ; / '4' 9/' +**27/ : ' =' 42' + ; / ' : ; / '4' +4' 49/' 4(+*' =//' J2*' . ' " DAG' 9 4/S' 1+=/' ' /+19' GAG' . " ' II' 22 : 7+(:S' 1+=/' .' /+19' GAH' '24/f' W+b' + ' :' =//' 249/('1+=/=' .' " ' II

9‘ 8 ’ 3‘ ‘ ’@N 3 <4!! ‘ 12 3‘ B

+(=* [‘ F@‘ DC A?@C‘G=‘ A?B @E‘ DA?‘=?‘ ?E J@? %‘GF F‘ =@E F=‘ F@‘DC A?@C‘=‘ B@CDAA %‘ ?‘ F@‘ A ? ‘=1AC@ = E%‘A?@‘ A=‘A1‘ F@‘B= @%‘, %‘ ?‘ F@‘EG@ ?> FA @‘A1‘ & ‘ %‘ F@?‘=?E‘ F@C@‘I@ ?>%‘ F@?‘=?E‘ F@C@‘1@ A? A ‘E E‘ @= %‘, %‘I ‘=‘EA I ‘F=B ?>‘A CC@E‘ GF@ F@C‘ F@‘ = A?‘A1‘ F@‘‘ A @‘G=‘ 11 @? ‘E@ C I@E%‘=?E‘ ‘GF@ F@C‘ F@‘ ?E J@?‘A >F‘?A‘ A‘F=B@‘ = @E‘7 ?‘ F@‘EG@ ?>‘ FA @‘ A1‘ & ‘ ‘ < " ‘ ! >6 P F@‘ DA ?‘G= ‘ I J @E‘ A‘ F@‘ Z E>@ %‘GFA‘F@ E‘ F=‘ F@‘ ?E J@?‘ F@G@E‘ 11 @? ‘; F=‘ F@‘ FA @‘G= ‘ = @‘=‘ B@CDAA %‘=?E‘ F=‘ F@‘ A?B A?‘G=‘ F@C@T 1AC@‘DCAD@C%‘ 7>3‘ 9

+*</‘ ?E J@?‘1AC‘ @= ?>‘=‘G= F‘=?E‘ @= !A1‘ F@‘B= @‘A1 ‘=‘G ?@ ‘F=B ?>‘ GAC?‘ F=‘ F@‘DCAD@ %‘?‘F L‘AD ? A?%‘G=‘ GAC F‘ F=‘ J%‘ F@‘Z C ‘?b C@E‘1‘ F@ ‘G@C=‘=‘ I@C ‘ A‘D ‘=‘ B= @‘A?‘ F@‘DCAD@C ‘F@J @B@‘;5=C<@%‘ %‘7 1‘=‘>@? @J=?‘ ‘?‘ F@‘ C=E@‘F@‘ J ‘I@‘ GAC?‘=‘=‘G ?@ ‘; F=‘>@?@C=‘<?AG @E>@‘ GF F‘=? ‘J=?‘ =?‘IC ?>‘A‘ F@‘ IZ@ ‘J=‘I@‘ @E‘G FA ;‘I ‘ 1‘ ‘E@D@?E‘ DA?‘=? ‘<?AG @E>@‘ A1‘ F@‘ C=E@%‘ F@‘ >@? @J=?‘ J ‘I@‘ GAC? H 1 3

W /(J+‘4 2 6/‘ ‘)‘+‘ :22(42‘ /‘+3*/‘ +‘249/(42‘ =4/+*)22:=‘ ‘‘ 49/‘ 92<=/‘+(:‘ +3=/‘4 79/‘‘ 49/# 7/(/‘ =42*/‘ DA?‘=?‘ ?E J@?‘1AC‘ @= ?>‘?‘=‘EG@ ?> FA @‘A‘ F@‘ =JA ?‘A1‘8_%‘ ‘=DD@=C@E‘ F=‘ @11@C @ %‘F@‘ @CB=?‘A1‘F@‘DC@1@‘ AC%‘=?E‘ C =?‘F=E‘=>C@@E‘ A‘CAI‘ F@‘DCA @ ACH‘FA @%‘=?E‘ ?‘D C =? @‘A1‘F ‘=>C@@J@? %‘ @11@C @‘ @1‘=‘EAAC‘A1‘ F@‘FA @‘ AD@?‘ ?‘ ACE@C‘ F=‘ C =?‘J >F‘@? @C‘ F@C@I ‘=?E‘ AJJ ‘F@‘ CAII@C %‘GF F‘F@‘= ACE ?> ‘E E‘ ?‘=IA ‘G@? ‘J ? @‘=1 @C‘ @11@C @‘F=E‘ @1‘ F@‘EAAC‘AD@?%‘=?E‘ ?‘ F@‘=I @? @‘A1‘ @11@C @‘$ ‘G=‘ A? @?E@E‘ F=‘=‘ @11@C @‘J >F‘F=B@‘I@@?‘ A?B @E‘=‘=‘ DC ? D=‘1‘ F@‘ ?E J@?‘F=E‘ I@@?‘ 1AC‘4FA @ 1@=< ?>‘153‘F@‘ J >F‘I@‘ A? E@C@E‘=‘=‘DC ? D=‘?‘ @= ?>‘F@‘DCAD@C ‘?‘ F@‘ EG@ ?> FA @;‘1AC‘ F@‘1ACJ‘A1‘ F@‘ ?E J@?‘ A E‘J=<@‘?A‘ E 11@C@? @‘ ?‘ F@‘ b @ A?‘GF@ F@C‘ @11@C @‘G=‘=‘DC ? D=‘?‘ AJJ ?>‘F@‘ =C @? ;‘I ‘ ‘G=‘F@ E‘ F=‘F@‘ A E‘?A‘I@‘ A?T B @E‘A?‘ F ‘?E J@? %‘ N?Vd

/(& 14‘ ?‘ F %‘=‘ ?‘ JA ‘A F@C‘ A11@? @ %‘=? ‘ A?@‘ A1‘ @B@C=‘D@C A? J=‘F@‘1A ?E‘> ‘ DA?‘=?‘ ?E J@?‘ F=C> ?>‘ F@J‘G F‘=‘ ZA ?‘A11@CC@@‘ ‘F@C@‘ @JD @=E‘=?E‘ E A?‘G@C@‘ ?E @E‘ DA?‘ F@‘ = @‘A1‘ ??@‘1AC‘ @= ?>‘ ?‘ F@‘EG@ ?> FA @‘ A‘ F@‘B= @‘ A1‘ I ‘ %‘=?E‘ F@‘Z C ‘1A ?E‘ @JD @=E‘> ‘=‘ A‘D=C‘A1‘ F@‘ =C @‘A1‘F@‘B= @‘A1‘ (C.‘=?E‘ E A?‘ > ‘=‘ A‘ F@‘C@ E @;‘ F@‘Z E>@ %‘ DA?‘=‘ = @‘C@ @CB@E%‘F@ E‘ F=‘Z E>J @?‘ A E‘?A‘I@‘ > B@?‘=>= ? ‘IA F%‘I ‘ F=‘ DA?‘=‘D=CEA?‘AC‘ 4 ‘E"4 >!‘=‘ A‘ E A?%‘ ‘J >F‘I@‘> B@?‘=>= ? ‘ @JD @=E%‘ R5B & F@C@‘=‘DC A?@C‘G=‘ ?E @E‘1AC‘CAII@C ‘ ?‘=‘FA @%‘AC‘ I C>T =C ‘ =?E‘ @= ?>‘A1‘>AAE %‘ =?E‘ F@‘ @B E@? @‘DCAB@E‘=‘ =C @? ‘ AJJ @E‘ ?‘ F@‘EG@ ?> FA @‘ A‘ F@‘=JA ?‘A1‘1AC ‘F ?> %‘ ‘G=‘F@ E‘ F=‘F@‘J >F‘I@‘= b @E‘A1‘ F@‘CAII@C ‘=?E‘I C> =C %

W4&ß /V‘ ‘ +"‘"/(‘ ‘ ‘ ‘ ‘ ‘ II‘ //‘ /V‘&‘ 19+(:=‘ .‘ ‘ ‘ 23‘ .DD‘ .‘"‘IA ‘ /V‘ ‘ 2==/(‘ D‘ ‘ ‘ ‘YIE‘ +(0/‘ ‘+‘ .‘ +<)9+‘‘ ‘ =‘42‘+**2‘) -4 2‘‘ ‘‘ ‘: 14 ; / ‘4 49+4‘)22:=‘2& 49/‘ J+*</‘2& =//‘ /) ‘ -2‘/* 2<=/‘.‘ 2V‘ ‘ ‘YN‘ !<(‘/#‘ ‘ /V‘ 2(:+‘‘ D‘ ‘ ‘ IHG /) ‘ /&&/(/=‘ +‘.‘: J+‘4‘ ! *2<1/=4/("(‘ == ‘ .EIE‘ 6* ‘ ‘ ! ‘ H‘ 2V‘ ‘ ‘EA‘ (/==7/**‘ ‘ +&4/(12‘=<*4‘)‘ +44/=2‘‘ ‘ <4‘ g =<19‘+‘1+=/‘‘27‘49/(/‘ ;)94‘9/‘+‘12 ; <1‘ 4 2‘‘ <‘:/& 49/‘GI‘ ‘GA‘ /4‘ 1‘NI‘ =‘ ‘J2*‘ .‘"‘.DI W^Wß /V‘ : / ; "=4/+:‘ ‘ +#*1#‘ ‘ +‘.‘ ‘ ‘ ‘HII

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' - : , ' -8' 3 @ ' ' ' 8 DCAB E@ ' F= ' ?A' !I E ?>'
= FA >F' G F ?' F@' =J@' C =>@' G F' =? ' EG@ ?> FA @' =?E'
A D @E' F@ !@G F' F= ' I@' E@@J@E' A' I@' D=C ' A1' F' EG@ ?> '
FA @' 1AC' =? ' A1' F@' D CDA @ ' A1' F ' ' ? @ ' F@C@' F= ' I@' ='
AJ J ? = A?' I@ G@@?' F' I E ?>' =?E' EG@ ?> FA @' @ @C'
J J @E = @' AC' I ' J @=? ' A1' =' AB@C@E' =?E' ? A @E' D= =>@' @=E ?>'
1CA J' F@' A?@' A' F@' A F @C=? E ' I ' @ ' ' T & FA A@B@C' F= ' I C =<'
!=?E' @? @C' =? ' I E ?>' =?E' AJ J ' ? KM@_A ' F@C@ ?' ' ' I ET
?>' I@ ?>' G F ?' F@' C =>@' A1' =' EG@ ?> FA @' =?E' A D @E'
F@C@G F' I ' ?A ' I@ ?>' D=C ' F@C@A1' = ACE ?>' A' F@' DCAB A?'
F@C@ ?I@1AC@' J@? A?@E' 4"' : ! 2' ! ' 6 ' ' > <' < B) ! 2' <6 '
, 45 ;&! ' 6 ' '* 4 ' ' < " ! ' 6 #' :" 6 ' 4> ' 4*' < ' 6& ' F= ' I@'
> ' A1' 1@ A? ' =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @' = ' F@'
E C@ A?' A1' F@' A C ' A' I@' <@D ' ?' D@?=1' @CB E@' 1AC' =? ' @CJ '
?A ' @] @@E ?>' 1A C @@?' @=C ' =?E' ?A ' @ ' F=?' FC@@' N=d' ZJ=C % ` AC'
A' I@' JDC A?@E' 1AC' =? ' @CJ ' ?A ' @] @@E ?>' GA' @=C ' G F' AC'
G FA ' F=CE' =IA C' =?E' G F' AC' G FA ' A =C ' A?1 ?@J@? ' 1<3
' @ ' 9' DC ? D= ' ?' F@' @ A?E' E@>C@@' =?E' = @ AC @ '
I@1AC@' F@' 1= ' =C@' D ? F=I @' ?' F@' =J@' J=??@C' = ' DC ? D= '
?' F@' 1 C ' E@>C@@' =?E' = @ AC @ ' =1 @C' F@' 1= ' N@] @D ' C@ @ B@C d'
=C@' =I @' A' JDC A?J@?' 1AC' =? ' @CJ ' ?A ' @] @@E ?>' GA'
@=C ' N d
F '@?= J@? ' D@ 1 ?>' = ' 'EA@ ' ?' @]DC@ ' @CJ ' =' I E ?>'
G F ?' F@' >" ! 62 ' A1' =' EG@ ?> FA @' =DD@=C ' ?A ' A' =D d ' A'
J=? ' A1' FA @' I E ?> ' =?E' A FA @ ' GF F' = FA >F' ?A ' G F ?'
=? ' AJ JA?' ? A C@' AC' C =>@' G@C@' E@@J@E' I ' F@' A E' =G' A1'
<>"2 6"' 'E6" '4*' F@' EG@ ?> FA @' 1CA J ' F@ C' =EZA ? ?>' A' F'
EG@ ?> FA @' =?E' I@ ?>' ?' F@' =J@' A D= A?' F@' ?b C '
?E@C' F ' DCAB A?' A1' F@' = @' G ' I@' JD ' GF@ F@C' F@'
I E ?>' ?' b @ A?' ' G F ?' F@' C =>@' AC' FA J @ = ;' I ' '
J = ' I@' @1 ' A' C@1@C' A' AJ@' A1' F@' DA ? ' 1AC J @C ' E@ E@E' ?'
= @ ' A1' I C> =C ' ?' GF F' ' I@ =J@' J = @C = ' A' A? E@C' GF@ F@C'
D=C =C' I E ?> ' G@C@' D=C @ ' A1' =' EG@ ?> FA @' =?E' F@' CT
J =? @' A1' F@ C' ' I@ ?>' = @E' G F ?' =' AJ J A?' A C@'
=DD@=C ' A' F=B@' I@@?' C@= @E' = ' =' J = @C = ' ?>C@E @? ' ' FA E

" B 24' */=' 49+' ' & J/' #/+(' &' 49/' 12 ' & ' / ; / ' 4' =/' =/1' . . N' J2*' . ' "' EM ?
2&&/ ' 1/' 7+' 12 ; ; 44/ :' +&4/(' 49/' GA49' 2& +' :' +' 42' =<(/4 /=' =/1' =/1' . . D' J2*' . '
<*#' . EYI ' //' J2*' . ' "' DH "' E. ' 9/' 14' :2/=' ' 24' /V4/ ' :' 42' 124P
" B ' :&+"=/' =' 4+O/ ' "' &(2 ; ' 49/' D' ' *+' :
E' ! /2')' 1' GN' =' . I' + ' : N' ! /2' I' 1' W1b' //' 49 =' =/14 2 ' ' J2*' . ' "' . EA'
AA' =' . I' W b[' =' 42' 9+(:' *+3"<(' =/' 9/' "(212/ : ' - =' &2(' 4* /' 4(+' 2& +11/=P
=/1' . . E' J2*' . ' "' EM ?' +' 42' =2* 4+ # =2(/=' +(/' '' J2*' . ' _ . DI '

d@' AI @CB@E%' FAG@B@C%' F=' ?' @B@C=' A1' F@ @' = @ ' F@' D=C =C' I E ?> ' J >F 'DA 'F=B@' I@@?'F@ E' A'< 'E6" 'A1' F@'EG@ ?> ' FA @' ?E@D@?E@? 'A1' F=' C J =? @

& @C@' F@' DC A?@C'F=E' ICA<@?' ? A' =' >AA @ FA @'GF F'AD@?@E' ? A' F@' DCA @ ACH' =CE%' ? A' BF ' =CE' F@' DCA @ ACH' FA @' = A' AD@?@E%' =?E' F@' =CE' G=' CCA ?E@E'D=C ' I 'A F@C' I E ?> ' A1' F@' FA J @ 1@=E%' =?E' D=C ' I ' =' G= %' AJ @' A1' GF F!' I E ?> X'' F=E' EAAC ' AD@? ?>' I= <G=CE %' = ' G@ ' = ' EAAC ' AD@? ?>' ? A' F@' =CE%' =?E' F@C@' G= ' =' >= @' ?' A?@' D=C ' A1' F@' G= ' AD@? ?>' DA?' =' CA=E%' F@' Z E>@ R' @ E' F= ' F@' >AA @ FA @' G= ' D=C @ ' A1' F@' EG@ ?> FA @% 7#3

& F@C@' FR' DCA @ ACH' FA @' G= ' = ' F@' AC?@C' A1' =' C@@ %' =?E' =EZA ? ?>' F@C@ A' != ' =' GAC< FAD%' I@ A?E' GF F' =' =I @' =?E' A= F FA @' =EZA ?@E';' = ' G@C@' @E' G F' F@' FA @%' =?E' F=E' EAAC ' AD@? ?>' ? A' =' =CE' I@ A?> ?>' A' F@' FA @%' GF F' =CE' G=' CT CA ?E@E' F ' =EZA ? ?>' I E ?> %' , %' A' = ' A' I@' = A>@ F@C' =?' ? A @E' =CE';' F@' GAC< FAD' F=E' ?A' ? @C?= ' AJ J ? = A?' G F' F@' FA @%' =?E' ' F=E' =' EAAC' AD@? ?>' ? A' F@' C@@ %' =?E' 'CAA1' G=' F >F@C' F=?' F= ' A1' F@' EG@ ?> FA @';' F@' C@@ EAAC' A1' F@' G C< FAD' G=' ICA<@?' AD@?' ?' F@' ? >F ;' =?E%' DA?' =?' ?E J @?' 1AC' I 1' = %' F@' b @ A?' =CA @%' GF@ F@C' F@' GAC< FAD' G=' D=C @ ' A1' F@' EG@ ?> FA @;' =?E%' DA?' =' = @' C@ @CB@E%' F@' Z E>@ ' G@C@' ?=? JA ' J ' 'G=' N@d F@' DCA @ AC' F=E' ?' A?@' C=?>@' A1' I E ?> ' =' FA @' GF F' F@' A D @E%' =' FA @' GF F' F@' @ %' =?E' =' G=C@FA @%' = ' A1' GF F' AD@?@E' ? A' =' =CE' GF F' G=' CCA ?E@E' I ' =' G= %' >= @ %' =?E' I E ?> ;' F@' @?=? ' A1' F@' @ A?E' FA @' F=E' @C = ?' @;1 @J@? ' ?' F@' =CE%' =?E' F ' FA @' G=' I@ G@@?' F@' DCA @ ACH' FA @' =?E' F@' G=C@FA @%' =?E' F@' GA' FA @ ' F=E' 1AC J @C ' I@@?' ?' A?@' F@' DC A?@C' G=' A?B @E' A1' I C> =C ' ?' IC@=< ?>' ? A' F@' G=C@FA @%' =?E%' DA?' =' = @' C@ @CB@E%' F@' Z E>@ ' G@C@' A1' AD ? A?' F=' F@' G=C@FA @' G=' D=C ' A1' F@' DCA @T ACH' FA @;' ' G=' A' I@1AC@' F@' FA @' G=' E B E@E%' =?E' ' C@ J = ?@E' A' ?A G F =?E ?>' F@' E B A?' NMd

' FA E' @@ J' F=' =' I E ?>' GF F' G=' ?A ' =? ' D=C @ ' A1' =' EG@ ?> FA @%' I ' F@' A E' =G' A1' I C> =C %' =??A ' I@' A? E@C@E' = ' =' I E ?>' G F ?' F@' C =>@' ?E@C' F@' C@ @?' = @ ' ' G ' I@' J = @C = %' F@C@1AC@' A' = @?E' A' F@' A??@ A?' A1' F@' C =>@' G F' AJ@' EG@ ?> FA @' ?' GF F' I C> =C ' J >F ' F=B@' I@@?' AJ J @E' ?E' G@' F=B@' @@?' F= %' I ' F@' @]DC@ 'DCAB A?' A1' F@' = @%' F@' I E ?>' G F ?' F@' C =>@' J ' I@' A D @E' G F' F@' EG@ ?> FA @%' Nbd

' G=' FA E@?' F=' I C> =C ' A E' ?A ' I@' AJ J @E' I ' IC@=< ?>' ? A' =' @? C@' I E ?>' @E' 1AC' F@' D CDA @ ' A1' C=E@%' I 'F=B ?>' ?A' ? @C?=' AJ J ? = A?' G F' F@' EG@ ?> FA @ 'GF F' 1AC J @E' F@' B ?>' F@' I E ?>' G=' = @E%' ?' F@' 1 C ' A ? ' A1' F@' ?E T J @? %' = ' F@' EG@ ?> FA @' A1' * ' (' A A?' $?' F@' @ A?E%' = ' F@' EG@ ?> FA @' A1' ' F;' =?E' ?' F@' F CE%' = ' F@' EG@ ?> ' FA @' A1' & ' " @ A?' F@' D = @' ICA<@?' ? A' G= ' =' @? C@' I ET ?>%' F=B ?>' GA' G ?> ;' ?' F' @? C@' I E ?>' =?' @] @? B@' I ?@ ' G= ' =CC @E' A?%' C@ = ?>' A' E 11@C@? ' J =? 1= AC @ ' ?

+=/ ' 74 19' "+(P 4 1<'+(' 3< *:P ')' U7/(/ 9/*:' 4Z' 3/' "+(1/' 2& +' : 7/** ')' 92<=/

/ '4(/' 3< *: ')' <=/ :' &2(' "<(P "2=/' 2& 4(+: / ' 3<' 9+J ')' '2 12 ; ; <' 1+P 4 2 '' 7 49' 49/' : 7 /** ')' 92<=/' 79 19' &2(; / :' 49/' 7 ')=

' /V' ' *+#3' ' ' ' ' ' HYM WW%' /V' ' U +'4/(=' g +#*/#' ' W/%' /V' ' 9+*0 ')' ' +#*/#' ' +' :' ' ' .H +' :' ' ' ' HHI' +' :'=/' /V' &' *9)2' "4% J :' _' AE ' ' ' HAD

GF F'A?@' * = F@G' qA A?' G=' A? @C?@E' G F' *' 6' A A?%
& ' "@ A?%' =?E' @B@C=' A F@C' D@C A? ;' =?E' = A' C@ = ?>' A' GA'
A F@C' J =? 1= AC @ ' ?' GF F' * = F@G' A A?' G=' A? @C?@E' A?'
F ' AG?' = A ? $' ?' D=C ' A1' A?@' A1' F@' G ?> ' G=' F@' EG@ ?> '
FA @' A1' * C ' A A?%' =?E' ?' F@' A F@C' D=C ' A1' F@' =J@' G ?>%'
F@' EG@ ?> FA @' A1' ' F%' J@? A?@E' ?' F@' @ A?E' A ?' A1'
F@' ?E J@? %' GFA' G=' =' GAC< J =?' A1' * = F@G' 4 A A?H ;' F '
?@ F@C' A1' F' EG@ ?> FA @ ' F=E' =? ' ? @C?=' AJ J ? = A?'
G F' F@' @? C@' I E ?>%' @] @D ' A? %' ?' F@' A?@' A D @E' I '
' F%' =' G ?EAG%' GF F' AA<@E' ? A' =' D= =>@' F=' C=?' F@' GFA @'
@?> F' A1' F@' @? C@' I E ?>;' =?E' ?' F@' A F@C' G ?>' G=' F@'
EG@ ?> FA @' A1' & ' "@ A?%' GF F' = A' F8 E' ?A' ? LC?=' AJ J T
? = A?' G F' F@' @? C@' I E ?>' ?' F@' 1CQ?' A1' F ' I E ?>'
F@C@' G=' =' @CC= @' AC' 1CA?' =CE%' 1@? @E' CA ?E' ?4E 11@C@?' G= %'
=?E' =' F@' @?E' A1' F@' D @' A1' I E ?>%' I ' =' G= %' G F' >= @ ' 1AC'
FAC @ ' =?E' =CC =>@ %' =?E' =' EAAC' 1AC' 1AA ' D= @?>@C '$ F@' DC A?@C '
@? @C@E' I ' =' EAAC' ?' F@' 1CA?' =CE%' FCA >F' G!F F' F@ ' G@?'
= A?>' F@' 1CA?' A1' F@' I E ?>%' =?E' CA ?E' ' ? A' =?A F@C' =CE'
I@F ?E' %' = @E' F@' J EE @' =CE;' 1CA J ' F@? @%' FCA >F' =' EAAC'
GF F' F=E' I@@?' @1 ' AD@?%' D' =' = C = @' ?' F@' @? C@' I E >%'
GF@C@' F@ ' ICA<@' AD@?' AJ@' A1' F@' CAA J ;' F=B ?>' A' @? E @E' F@'
DC@ J @ ' I ' F@' = =? @' A1' =' @CB=?' A1' * = F@G' A A?H %' GFA'
= @E' = ' =?' = AJ D @' 1AC' F@' D CDA @' A1' @11@ ?>' F@' =DDC@F@? A?'
A1' F@' DC A?@C ' DA?' =' = @' C@ @CB@E%' F@' Z E>@ ' =>C@@E' F= '
@' DC A?@C ' G@C@' ?A ' > ' A1' I C> =C ';' =?E' F@' >CA ?E ' DA?'
GF F' F@ ' A' E@ E@E' =C@' = @E' A' F=B@' '@@?%' F= ' F@' @? C@'
I E ?>%' I@ ?>' =' D = @' 1AC' =CC ?>' A?' =' B=C @ ' '1' C=E@ %' =?E'
F=B ?>' ?A' ? @C?= ' AJ J ? = A?' G F' F@' =EZA ? ?>' FA @ %' A E'
?A ' I@' A? E@C@E' = ' D=C ' A1' =? ' EG@ ?> FA @;' =?E' F= ' ' G= '
?A ' A' I@' A? E@C@E' = ' ?E@C' F@' =J@' CAA1' = ' F@' FA @ ' =EZA ?T
?>%' FA >F' F@' CAA1' A1' ' F=E' =' A??@] A?' G F' F@' CAA1 ' A1' F@'
FA @ %' 1<3

L+142(#' :'
: 7/** ') '
92<=/' 7 49' +''
'4/('+' 12 ;]'
; <' 1+4 2' '
49/' &+142(#
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"+(4*# &2(' 49/'
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3<= '/=' 2&
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92<=/' +' :'
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K(919 9/' 9+:'
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F@' DC@ J @ ' G@C@' CCA ?E@E' I ' =' >=CE@?' G= %' F@' 1CA?' G= '
A1' F@ '1= AC %' =?E' F@' G= ' =?E' >= @' A1' F@' =I @' =CE;' F@ '
&@C@' A1' F@' @] @?' A1' C= F@C' J AC@' F=?' =?' = C@%' =?E' F@' FA @'
&=' ?' F@' @? C@';' F@C@' G= ' ?A' A F@C' AJ J ? = A?' I@ G@@?' F@'
FA @' =?E' F@' 1= AC ' F=?' I ' A?@' AD@?' D= =>@' ? E@' F@' G= '
?' F@' 1= AC ' F@' DCA @ AC%' F@' A D @C' A1' F@' EG@ ?> FA @%'
=CC @E' A?' A?@' I ?@ ' A1' F ' AG?%' =?E' =?A F@C' ZA ? ' G F' ='
D=C ?@C%' GFA' B@E' @ @GF@C@';' =?E' F@' CAA J ' AB@C' F@' 1= AC ' G@C@'
@E' 1AC' F@' ZA ? ' = ' G@ ' = ' F@' @D=C= @' I ?@ ' F@ @' CAA J '
&@C@' ICA<@?' ? A%' =?E' D=C ' A1' F@' @D=C= @' DCAD@C ' A1' F@' DCA @T
AC%' =?E' = A' D=C ' A1' F@' ZA ? ' DCAD@C ' G= ' A @?' ;' =?E' DA?' =?'
?E J@? ' 1AC' I C> =C ' ?' F@' EG@ ?> FA @' A1' F@' DCA @ AC%'
=?E' =1 @C' A?B A?%' =' = @' I@ ?>' C@ @CB@E%' F@' Z E>@ ' F@ E' F= '
F@ @' CAA J ' G@C@' D=C ' A1' F@' DCA @ ACH ' EG@ ?> FA @%' =?E' F= '
F@' A?B A?' G= ' C >F %' 1!3

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49 '' +' *+()/(
'1*2=<(/

& F@C@%' DA?' =?' ?E J@? ' 1AC' I C@=< ?>' =?E' @? @C ?>'=' I E ?>'
G F ?' F@' C =>@%' ' =DD@=C@E' F= ' F@C@' G= ' =' =C>@' b =C@'
? A C@' = ' F@' I= <' A1' =' EG@ ?> FA @%' CCA ?E@E' A?' = ' E@'
I ' =' I=C?%' AG F@E %' =' >C=?=C %' D > @ %' =?E' G= %' =?E' F=

W ß /V' ')) <42' ' G' /]Y9' N.H' W'ß /V' ' +'1210' ' +#*/#' '
-' +=4' ' '1' .A' =' .M' ')T)' ' 2= +' :' ' ' . WM
,' 5 ' 8 9

1 V ' d' L 3' ' ' 3 ' DH

G F ?' F' =C>@C' ? A C@' F@C@' G=' =' @ @C' ? A C@% =I ?>'
?' A?@' E@' A?' F@' I= <' A1' F@' EG@ ?> FA @% =?E' A?' =?A F@C' A?'
@' D > @ % =?E' F@' F CE' =?E' 1A C F' E@ ' A1' GF F' G@C@' 1AC J@E'
I ' =' G= ' =I A ' 1A C' 1@@ ' F >F% GF F' @D=C= @E' ' 1CA J ' F@' A F@C'
D=C ' A1' F@' =C>@' ? A C@% =?E' F@' I < EAAC' A1' F@' FA @' @? @C@E'
? A' F' @ @C' ? A C@% =?E' A ' A1' ' F@C@' G= ' =' > = @' FCA >F'
F@' G= ' ? A' F@' =C>@C' ? A C@% ? A' GF F' F@C@' G= ' ?A' EAAC'
J J @E = @ ' @=E ?>' 1CA J ' F@' FA @' ;' =?E' AJ @' AC?' G= ' A @?'
A ' A1' F@' >C=?=C % GF F' G= ' A?' F@' ADDA @' E@' A1' F@' =C>@'
? A C@' 1CA J ' ?L' FA @' ;' ' G= ' F@ E' F= ' F@' GFA @' A1' F@' =C>@C'
? A C@' G= ' G F ?' F@' C =>@% =?E' ?A ' J @C@ ' F@' @ @C' ? A '
C@' J J @E = @ ' = ' F4I' I = <' A1' F@' FA @% =?E' A? @b @? ' F= '
F@' >C=?=C ' G= ' =' F E ?>' G F ?' F@' C =>@ ' NMd
' A' =?' A FA @' I@ ?>' D=C @ ' A1' =' EG@ ?> FA @' GF@?' F@ E'
?E@C' =' E ? ' @% @@' 6 ' D '
F@' DCA @ AC' F=E' =' EG@ ?> FA @% G=C@FA @ % =?E' A F@C'
I E ?> % =?E' =' =CE' ;' F@' @? C=? @' ? A' F@' =CE' G= ' FCA >F' ='
D= C' A1' >= @ ' GF F' AD@?@E' ? A' =' AB@C@E' G= ';' AB@C' F ' G= '
G@C@' AJ@' A1' F@' G=C@FA @ % =?E' F@C@' G= ' =' AAD FA @' =?E' C=?@'
AB C' F@' >= @ ' A' =E J ' A1' >AAE ' I@ ?>' C=?@E' D' ;' =?E' F@C@' G= '
= A' =' 1C=D EAAC' ?' F@' CAA1' A1' F@' AB@C@E' G= ';' F@C@' G= ' 1C@@'
AJ J ? = A?' 1CA J ' F@' G=C@FA @ ' A' F@' EG@ ?> FA @' $ F@'
DC A?@C ' AD@?@E' F@' >= @ ' ?' F@' ? >F ' G F' ? @? ' A' @= % =?E'
@? @C@E' F@' =CE% F ' E E' ?A ' @? @C' =? ' A1' F@' I E ?> ' ;' =?E'
DA?' =' = @' C@ @CB@E% F@' Z E>@ ' G@C@' ?=? J A ' F= ' F@' A G=CE'
1@? @' A1' F@' C =>@ ' ' ?A ' AD@? ?>' ? A' =? ' A1' F@' I E ?> ' &= '
?A' D=C ' A1' F 1'EG@ ?> FA @' 1D 3 A' =?' =C@= >= @' AD@? ?>' ? A'
F@' =C@=' A? ' ' ?A ' F' D=C ' A1' F@' EG@ ?> FA @% F= ' F@'
IC@=< ?>' A1' F@' >= @' G ' I@' I C> =C % 1' F@C@' I@' =? ' EAAC' AC'
1= @? ?>' A' DC@B@? ' D@C A? ' ?' F@' =C@=' 1CA J ' @? @C ?>' F@' FA @% Y
= FA >F' F' EAAC' AC' A F@C' 1= @? ?>' J = ' ?A ' I@' @ C@E' = ' F@'
J @ ' F@' DC A?@C ' AD@?@E' =?' =C@= >= @' ?' =' C@@ ' ?' A?EA?%
=?E' @? @C@E' F@' FA @' FCA >F' =' EAAC' ?' F@' =C@=' GF F' F=DD@?@E'
A' I@' AD@?% I ' GF F' G= ' = G= ' 1= @?@E' GF@?' F@' 1=J '
G@? ' A' I@E% =?E' G= ' A?@' A1' F@' ACE ?=C ' I=CC @C ' =>= ? ' F @B@
=B ?>' A @?' ?' F@' FA @' A' F@' B= @' A? ' A1' F C ? ?@'
F ?> % =' b @ A?' G= ' J =E@' GF@ F@C' F@' IC@=< ?>' F@' =C@= >= @'
G= ' IC@=< ?>' F@' E B@ ?> FA @' A' = ' A' A? @' I C> =C % =?E'
= ' F@C@' G= ' ?A' 1C@@' D= =>@' ?' J @' A1' @@D' 1CA J ' F@' =C@=' ? A'
F@' FA @% F@' Z E>@ ' F@ E' ?=? J A ' F= ' F@' IC@=< ?>' G= ' ?A '
=' IC@=< ?>' A1' F@' EG@ ?> FA @' 1 3
DA?' F@' C = ' A1' =? ' A11@? @' J @? A?@E' ?' F ' F=D @C% F@' 2'J /4 2'' 2B
Z C ' J = % ?E@C' F@' . I' ' . A' 3 @ ' ' . MM' ' N' A?B ' A1' =?' +'' +44/ ; "4'
= @ J D ' A' A J J ' F' A11@? @% =?E' F@C@ DA?' F@' DC A?@C' J = '
I@' D ? F@E' = ' 1' F@' F=E' I@@?' A?B @E' A?' =?' ?E J @? ' 1AC' F'
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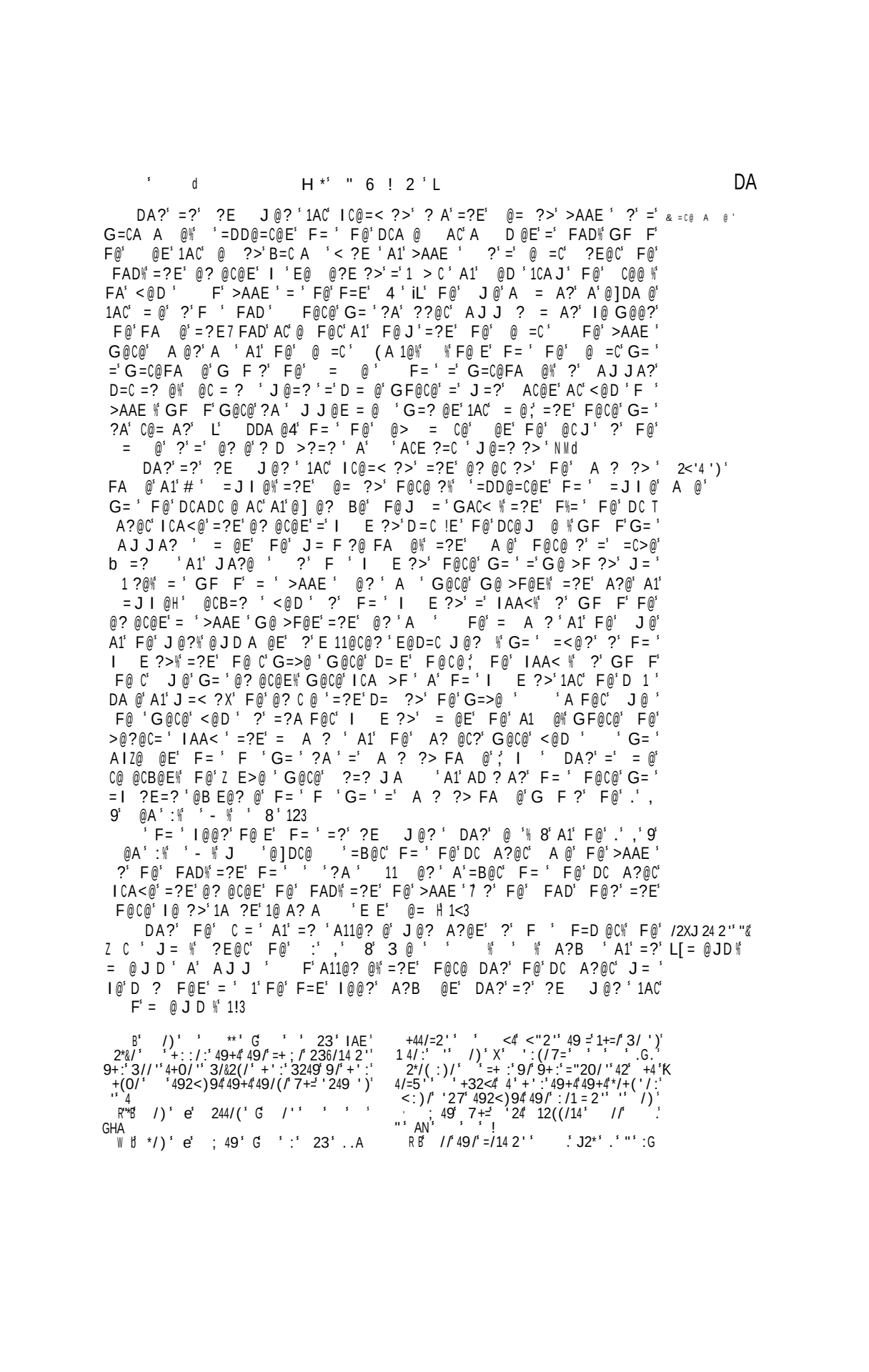

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‘ ‘ @=C‘ F= ‘ 1‘ A?‘ F@‘ C = ‘ A1‘ =? ‘ ?E J@? ‘ 1AZ‘ I C> =C ‘ G F‘ ? @? ‘ A‘ AJ J ‘ =? ‘1@ A? ‘ F@‘ IC@=< ?>‘ =?E‘ @? @C ?>‘ G@C@‘ DCAB@E‘ A‘ F=B@‘ I@@?‘ I@1AC@‘ ? ?@‘ AH A <‘ = ‘ ? >F ‘ F@‘ DC A?@C‘ J >F ‘ I@‘ A?B @E‘ ?E@C‘ F ‘ = @‘ ‘ DA?‘ =?‘ ?E J@? ‘ ?‘ F@‘ 4"#! 6" ' '*4"& ‘1AC‘ FA @ IC@=< ?>‘ , ‘ F@‘ DC A?@C‘ A E‘ ?A ‘ I@‘ A?B @E‘ ?E@C‘ F ‘ = @‘;‘ I@ = @‘ ‘EA@ ‘?A ‘= @>@‘ =?‘ ? @? ‘ A‘ AJ J ‘ ='‘ 1@ A? ‘ ‘G ‘ I@‘ G@ ‘ FAG@B@C‘ A‘ = @C‘ F@‘ 1A J‘ A1‘ F@‘ ?E J@? ‘ ?‘ @B@C ‘ = @‘ GF@C@‘ ='‘ IC@=< ?>‘ ? A‘ =?E‘ @= ?>‘ , f‘ ?‘ =? ‘ I E ?>‘ J @? A?@E‘ ?‘ F ‘ = @‘ ‘ F=C>@E‘ =?E‘ A‘ = @>@‘ ='‘ IC@=< ?>‘ =?E‘ @? C ‘G F‘ ? @? ‘ A‘ AJ J ‘ AJ@‘ 1@ A? ‘ ?‘ F@‘ = J @‘ J =??@C‘ = ‘ ?‘ =?‘ ?E J@? ‘ 1AC‘ I C> =C ‘ G F‘ ? @? ‘ A‘ A ? J ‘ ='‘ 1@ A? ‘ =?E‘ F@?‘ A‘ = @>@‘ F@‘ 1@ A? ‘ F= ‘ ‘ DDA @E‘ A‘ F=B@‘ I@@?‘ AJ J @E‘ ?‘ F@‘ FA @‘ , ‘ 1‘ F ‘ I@‘ EA?@‘ F@?‘ 1‘ F@‘ @B E@? @‘ 1= ‘ A‘ DCAB@‘ F@‘ AJ J A?‘ A1‘ F= ‘ 1@ A? ‘ I ‘ DCAB@‘ F= ‘ F@‘ DC A?@C‘ ICA<@‘ =?E‘ @? @C@E‘ G F‘ ? @? ‘ A‘ AJ J ‘ ‘ F@‘ J = ‘ I@‘ A?B @E‘ ?E@C‘ F ‘ = @

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WYtꞌ Dꞌ ꞌ Eꞌ ! /2ꞌ Iꞌ 1ꞌ GNꞌ N ! /2ꞌ Iꞌ 1ꞌ AAꞌ W bꞌ + ' :ꞌ Dꞌ **ꞌ Iꞌ ꞌ ꞌ /4ꞌ 1ꞌ EDꞌ W1tꞌ /1ꞌ .ꞌ .ꞌ D 5.ꞌ Bꞌ 24ꞌ */=ꞌ 49+ '" & J/ꞌ #/+(=ꞌ &ꞌ 49/ꞌ 2&&/ ' 1/ꞌ 7+=ꞌ 12 ; ; 44/ :ꞌ +&4/(ꞌ 49/ꞌ GA49ꞌ 2& <*#ꞌ .EYI ꞌ /ꞌ J2*ꞌ .ꞌ "ꞌ DH W/tꞌ 9 =ꞌ 1*+<=/ꞌ =ꞌ 4+O/ '" &(2 ;ꞌ 49/ꞌ Dꞌ **ꞌ Iꞌ ꞌ .ꞌ /4ꞌ 1ꞌ EDꞌ =ꞌ Aꞌ =ꞌ 42ꞌ 9+(:ꞌ *+32<(ꞌ =/ꞌ =/1ꞌ . .Eꞌ ? +=ꞌ 42ꞌ =2* 4+(# 12 '& ' / ; / ' 4ꞌ =/ꞌ =/1ꞌ . .N ? +' :ꞌ +=ꞌ 42ꞌ =<(/4 /=ꞌ =/ꞌ =/1ꞌ H.Dꞌ J2*ꞌ .ꞌ "ꞌ EMꞌ E.ꞌ ? .ꞌ "ꞌ A.ꞌ 9/ꞌ 14ꞌ :2/=ꞌ ' 24ꞌ /V4/ ' :ꞌ 42ꞌ 124*+ ' :

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= = ' G F' ? @? ' A' CA I' ', =?E' F@C@ DA?' F!E@1@?E=? ' F= ' I@'
=I @' A' I@' D ? F@E' ?' F@' =J @' J =??@C' = ' 1'F@' F=E' I@@?' A?T
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CA I' ', =?E' ?A' D@C A?' A' C @E' = ' ' F@C@ ?' = ' J @? A?@E' F= ' I@'
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AJ J ' F@' CA I I@C ' 1AC' GF F' F@' G= ' A' C @E H NMd
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=?E' @] @D ' ?' F@' = @ ' GF@C@' =' >C@= @C' D ? F J @? ' ' DCAB E@E' I '
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D@?= ' @CB E@' 1AC' Z'@' @C J ' A1' FC@@' NMMd @=C %' AC' A' F@' J DC A?@E'
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E = @ k1 @C' F' CA I I@C ' F= ' GA ?E%' I@= %' C <@%' AC' @' =? ' (233/(# +' : '
A F@C' D@C A?= ' B A @? @' A' =? ' D@C A?%' F= ' I@' > ' 1' 1@ A? %' 72<' : ')
=?E' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @%' = ' F@' E C@ A?' A1' F@'
A C %' A' I@' <@D ' ?' D@?= ' @CB E@' 1AC' 1@%' AC' 1AC' =? ' @C J ' ?A '
@ ' F=?' FC@@' N d' @=C % ` AC' A' I@' JDC A?@E' 1AC' =? ' @C J ' ?A '
@] @@E ?>' GA' @=C %' G F' AC' G FA ' F=CE' =I A C%' =?E' G F' AC'
G FA ' A =C ' A?1 ?H J @? ' NZd
F@' - ' ,' - .' 3 @ ' ' : :%' C@ @ ' F@' DC@ @E ?>' = @' =?E' F@' 27/(' 42'
- :' ,' -8' 3 @ ' ' %' ' - %' =?E' @?= %' F= ' 7 & F@C@' =? ' D@C A?' ' +7+(:' "<' =9P
A?B @E' A1' =' C J @' ?E@C' @ F@C' A1' F@' = E' @ A? %' F@' A C ' ; / ' 4 2&
I@1AC@' GFA J ' F@' ' A?B @E' J = %' ?' =EE A?' A' F@' D ? F J @? ' 79 "" ')
=G=CE@E' I ' F@' = E' @ A? ' AC' =? ' D=C ' F@C@A1%' E C@ ' F= ' F@'
A11@?E@C%' 1' =' J = @%' I@' A? @%' G @%' AC' FC @' DC B= @ ' GF DD@E%'
IZ@ ' A' F@' 1A AG ?>' DCAB A? ' $
7 ' F= ' ?' F@' = @' A1 '=?' A11@?E@C' GFA @' =>@' EA@ ' ?A ' @] @@E'
] @@?' @=C %' F@' ? J I@C' A1' CA<@ ' = ' @= F' F' GF DD ?>'
EA' ?A ' @] @@E' G@? 1 B@%' =?E' F@' ? C J @? ' @E' F= '
I@' =' I C F' CAE' $
7 - ' F= ' ?' F@' = @' A1' =? ' A F@C' J = @' A11@?E@C' F@' ?b J I@C' A1'
CA<@ ' EA' ?A ' @] @@E' 1 1 ' = ' @= F' F' GF DD ?>' $
7 ' F= ' ?' @= F' = @' F@' A C ' ?' ' @? @? @' F= ' D@ 1 '
F@' ? J I@C' A1' CA<@ ' A' I@' ?1 @E' =?E' F@' ? C J @? ' A'
I@' @E' $
5CAB E@E' F= ' ?' ?A' = @' F= ' F' GF DD ?>' =<@' D = @' =1 @C' F@

W wb' 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' . I' ' <*#' . EY I ' //' J2*' . ' "' DH
.A' /4' 1' . .M' = ' . .
"38' 24' */=='49+ '' & J/' #/+(=' &' 49/' S B' ' : /(' 49/' D' ** ' I' ' ' /4'
2&&/ '1/' 7+=' 12 ; ; 44/ :' +&4/(' 49/' GA49' 2& M' ED' =' G' (233/(# +112 ; "+ ' / :' 3# +'#
<*#' .EY I ' //' J2*' . ' "' DH =4+3' 1<4' 2(' 72<' :' 7+=' 1+" 4+*? 49+4'
W b 9 = 1*+<=/' =' 4+0/ '' &(2 ;' 49/' D "<' =9 ; / '4 =' +32* =9/ : ' + ' :' 49+4' =/14 2 ''
** ' I' ' /4' 1' ED' =' Y' =' 42' + ' :' =/1' H +(/' '12("2(+4/ :' ''49 =' 1*+<=/ '
9+(:' *+32<(' 1 ' =//' : "' A. ' J2*' . ' 9/' 72(:' =' 0=4+3$ + ' :' 01<4$ +(/' 2 ; 44/ : '
"' EM' E. 3/1+<=/' 49/' 72(:' 0 72<'1-$ '1*<: /=
W b 24' */=='49+ '' & J/' #/+(=' &' 49/' 49/ ; ' =' 42' 9+(:' *+32<(' 1 ' =//' :'
2&&/ '1/' 7+=' 12 ; ; 44/ :' +&4/(' 49/' GA49' 2& "' A. ' J2*' . ' "' EM' E.

! @] D C= A ' ?' A 1']' J A ? F ' 1CA J ' F @' D= ?>' A 1' F @' @ ? @ ?; ' DCAT
B E@E' = A% F = ' @B@C ' F' G DD ?>' A' I @' ?1 @E' A?' =? ' D@C A?
H @ ? @ ? @E' A' D@?= ' @CB E@' F= ' I @' ?1 @E' A?' F J ' I @1AC@' F@'
F= ' ID' C@ J AB@E' A' =' A?B ' DC A?' G F' =' B @G' A' F ' ?E@C>A ?>'
!F ! @ ? @ ? @' A1' D !?= ' @CB 'E@ H

/44/(' F@' - :' ,' -8' 3 @ ' ' % ' : : % 7 & FA A@B@C' F= ' @?E% E@ B@C'
: / I + '1l 4l)' 4 "' > " ' AC' E C@ ' AC' ?E C@ ' = @!' A' I @' C@ @ B@E% 4 ! 2'
; 2 ' /#' 1 ' < ' 4 ' < " 4* ' =? ' @ @C' AC' GC ?>' E@ J =?E ?>' A1' =? ' D@C A?'
7 4* ' ; / '+1/=] G F' J @?= @ % =?E' G FA ' =? ' C@= A?=I @' AC' DCAI =I @' = @% =? '
(E"H*V" ' ' F= @ % J A?@ % B= =I @' @ C % 4"' 4 < "' 6 >6 : '
<! 2 ' F= ' I @' > ' A1' 1@ A? % =?E' I @ ?>' A?B @E' F@C@A1' F= '
I @' =I @% = ' F@' E C@ A?' A1' F@' A C % A' I @' <@D ' ?' D@?= '
@CB E@' 1AC' 1@' AC' 1AC' =? ' @C J ' ?A ' @ ' F ' ?' FC@@' NWAd @=C % ` '
AC' A' I @' J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' @=C % G F'
AC' G FA ' F=CE' =I A C% =?E' G F' AC' G FA ' A =C ' A?1 ?@T
J @? % =?E% 1' =' J = @' ?E@C' F@' =>@' A1'] @@?' @=C % G F' AC'
G FA ' GF DD ?> H 7 3

/ ; + ' : ') ' @ ' :8 ' 7 & FA A@B@C' F= ' G F' J @?= @ ' AC' I ' 1AC @' E@ J =?E'
; 2 ' /#' 1 ' =? ' DCAD@C % <6 ' & 4 ' ' 6 >6< ' >& ' ' 4"' 4 < "' 6 >6 : '
7 49' ; / '+1/=' <! 2' A1' =? ' D@C A?% G F' ? @? ' A' @= ' F@' = J @% F= ' I @' > ' 1 '
' 2(3# &2(1/ ' A1' 1@ A? % =?E' I @ ?>' A?B @E' F@C@A1' F= ' I @' =I @% = ' 'F@' E T
7 44' '4/ '4 42' C@ A?' A1' F@DA C % A' I @' <@D ' ?' D@?= ' @CB E@' 1AC' F@' @C J ' A1'
=4/+* FC@@' 7 3' @=C % ` 7AC' A' I @' J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>'
GA' @=C % G F' AC' G FA ' F=CE' =IA C% =?E' G F' AC' G FA ' A =C '
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/44/(@ ' : ' 7 & FA A@B@C' F= ' @?E% E@ B@C% AC' @C% AC' E C@ ' AC'
49(/ +4/ ' ')' 42' ?E C@ ' = @' A' I @' C@ @ B@E% 45! 2' ! ' 4 ' < " 4* ' =? '
+11<=/' 2& @ @C' AC' GC ?>' = ?>' AC' FC@= @? ?>' A' = @' =? ' A F@C' D@C A?'
1(; / ' 7 49' A1' =? ' C J @' D ? F=I @' I ' =G' G F' E@= F' 4"' E 6 ' & >#
'4/ '4 42' 4 ' ' <6 ' ' ' 6" ' AC' A1' =? ' = = ' G F' ? @? ' A' AJ J '
/V42(4 =? ' C=D@% AC' A1' =? ' = @ J D ' AC' @?E@=BA C' A' AJ J ' =? ' C=D@% AC'
A1' =? ' ?1=J A ' C J @' = ' F@C@ ?=1 @C' E@1 ?@E% G F' =' B @G' AC' ? @? '
?' =? ' A1' F' = @ ' A' @] AC ' AC' >= ?' I ' J @=? ' A1' F' @ @C' AC'
GC ?>' =? ' DCAD@C % <6 ' JA?@ % B= =I @' @ C % AC' A F@C'
3= =I @' F ?>% 1CA J ' =? ' D@C A?% F= ' I @' > ' A1' 1@ A? % =?E'
I @ ?>' A?B @E' F@C@A1' F= ' I @' =I @% = ' F@' E C@ A?' A1' F@'
A C % A' I @' <@D ' ?' D@?= ' @CB E@' 1AC' 1@% AC' 1AC' =? ' @C J ' ?A '
@ ' F=?' FC@@' 1 3' @=C % ` AC' A' I @' J DC A?@E' 1AC' =? ' @C J ' ?A '
@] @@E ?>' GJ' @=C % G F' AC' G FA ' F=CE' =IA C% =?E' G F' AC'
G FA ' A =C ' A?1 ?@ J @? % =?E% 1' =' J = @' ?E@C' F@' =>@' A1']T
0 '&+ ; 2<=' @@?' @=C % G F' AC' G FA ' GF DD ?>; ' =?E' F@' =IA J ?=I @' C J @' A1'
1(; / ' $ I >>@C % AJ J @E' @ F@C' G F' J =?< ?E' AC' G F' I @= % =?E' @B@C '
:/& ' / : = = ' G F' ? @? ' A' J J ' F@' = E' =IA J ?=I @' C J @% =?E' @B@C '
= @ J D ' AC' @?E@=BA C' A' AJ J ' F@' = J @' =IA J ?=I @' C J @% =?E'
@B@C ' A = A?% D@C = A?% DCA J @% AC' FC@= ' A 1@C@E' AC' J =E@' A'
=? ' D@C A?' & F@C@I ' A' JAB@' AC' ?E @' F' D@C A?' A' AJ J '
AC' D@C J ' F@' = E' =IA J ?=I @' C J @% F= ' I @' E@@ J @E' A' I @' =?'
?1=J A ' C J @' G F ?' F@' J @=? ?>' A1' F ' H N J d

" B 2% */=' 49+ ' ' & J/' #/+(=' &' 49/' 49+% 49/# ; +# 3/' =// ' ' ' 12 ' ' /14 2 ' '
2&&/ '1/' 7+=' 12 ; ; 44/ :' +&4/(' 49/' GA49' 2& 7 49' 49/' 249/ (' =/14 2 ' =' 9/(/' ' 4(2 : <1/ :
<*# ' . EY I ' /' J2* ' . ' " ' DH R B' 9 =' 1*+<=/' + ' :' 49/' 1+=/=' 3/+(')'
"C B 9 =' T 14 2 ' ' + ' :' 49/' /+=/=' 9/+(')' 2 ' ' 4 ' 7 ** 3/' &2<' :' J2* ' H ' 220 A'
<"2 ' ' 4 ' 7 ** 3/' &2<' :' J2* ' H ' 19+" ' I ' ' ' 3' D
3' D 9 =' =/14 2 ' ' + ' :' //' 49/' ' 24/' 42' =/1 ' IH '
=/1=' IA' ' IY' +(/' ' 4(2 : <1/ : ' 9/(/' ' ' 2(: /(

@ ' ID' 7 & A A@B@C F= ' = @' AC C ' @?' A' +11<=/ ' @ F@C ' F@' D@C A?' A'GFA J' F' = = A?' AC FC@= ' F= ' I@' J =E@' AC =? ' A F@C D@C A?% A1' =? ' A1' F@' ?1= J A ' AC A F@C C J @ ' = ' F@C@ ? ! I@1AC@' J @? A?@E% G F' F@' B @G' AC ? @? ' ?' =? ' A1' F@' = @ ' = ' =1AC@ = E' A' @] AC ' AC >= ?' 1CA J ' ' F' D@C A?' A' = @E' AC FC@= @?@E' A' F@' = @E% AC 1CA J ' =? ' A F@C' D@C A?% =? ' DCAD@C % <6 ' J A?@ % B= =I @' @ C % AC A F@C' B= =I @' F ?>% F= I @' > ' A1' 1@ A? % 7 3' =?E' I @ ?>' A?B @E' F@C@A1' F= ' I @' =I @% = ' F@' E C@ A?' A1' A' A C % A' I @' <@D ' ?' D@?= ' @CB E@' 1AC 1@% AC 1AC =? ' @C J ' ?A @ ' F=?' FC@@' NAd @=C % ` AC A' I @' J DC A?@E' 1AC =? ' @C J ' ?A ' @] @@E ?>' GA' @=C % G F' AC G FA ' F=CE' < IA C% =?E' 1' =' J = @' ?E@C' Z @' =>@' A1'] @@?' @=C % G F' AC G FA ' GF DD ?> H N 4 ' '

11<= ')' 2(49(/+4/ ' ')' 42' +11<=/ ' 7 49' ' 4/ ' 4 42 ' /V42(4

@ ' :9 ' 7 & FA A@B@C% G F' ? @? ' A' E@1C= E' AC ?Z C@' =? ' A F@C' D@C A?% F= % I ' =? ' ? =G1 ' B A @? @' A' AC C@ C= ? ' A1% AC FC@= ' A1' B A @? @' A' AC C@ C= ? ' A1% F@' D@C A?' A1' =?A F@C% AC I ' = ?>' AC FC@= @? ?>' A' = @' =? ' D@C A?' A1' =? ' C@= A?% 1@ A? % AC ?1= J A ' C J @' = ' F@C@ ?I@1AC@' E@1 ?@E% AJ D@ ' AC ?E @' =? ' D@C A?' A' @] @ @% J =<@% = @D % ?EAC @% = @C% AC E@ CA ' F@' GF> @' AC =? ' D=C ' A1' =? ' B= =I @' @ C % AC A' GC @% J DC@ % AC =11]' ' ?= J @% AC F@' ?= J @' A1' =? ' A F@C' D@C A?% AC A1' =? ' AJT D=? % 1 C J % AC AD=C ?@C F D% AC F@' @=' A1' =? ' I@E ' ACDAC= @% AJ D=? % AC A @ % DA?' AC A' =? ' D=D@C' AC D=C F J @? % ?' ACE@C' F=' F@' = J @' J = ' I@' =1 @CG=CE ' J =E@' AC A?B@C @E' ? A% AC @E' AC E@= ' G F' = % =' B= =I @' @ C % F= ' I@' > ' A1' 1@ A? % =?E' I@ ?>' A?B @E' F@C@A1' F= ' I @' =I @% = ' F@' E C@ A?' A1' F@' A C % A' I @' <1@D' ?' ' @?= ' @CB E@' 1AC 1@% AC 1AC =? ' @C J ' ?A ' @ ' F=?' FC@@' 7 3' @=C % ` AC A' I @' J DC A?@E' 1AC =? ' @C J ' ?A ' @] @@E ?>' GA' @=C % G F' AC G FA ' F=CE' =IA C% =?E' G F' AC G FA ' A =C ' A?1 ?@ J @? H NCd

'<'+4/ (+' &(2 ;' 792 ;' 49/' ; / '+1/=' "(21// : 0 (2"/(4# S

@ ' IN' 7 ' F= ' I@' J J = @C = ' G F@ F@C' F@' J @?= @ ' AC C@= ' F@C@ ?I@1AC@' J @? A?@E' I@' A1' B A @? @% ?Z C % AC' = = A?' A' I@' = @E' AC' J =E@' I ' F@' A11@?E@C' AC' I ' =? ' A F@C' D@C A? H 1 (3 ' @ ' % F@' @C J ' [' DCAD@C 'n' F= ' ? E@' @B@C ' E@ C DT A?' A1' C@= ' =?E' D@C A?= ' DCAD@C % J A?@ % E@I % =?E' @>= @ % =?E' = ' E@@E ' =?E' ? C J @? ' C@ = ?>' A' AC @B E@? ?>' F@' @' AC C >F ' A' =? ' DCAD@C % AC > B ?>' =' C >F ' A' C@ AB@C' AC C@ @ B@' =? ' J A?@ ' AC >AAE % =?E' F= ' = A' ? E@' ?A ' A? ' F' DCAT D@C ' = ' F= ' F=B@' I@@?' 4 2 ! # ' '! ' < ' E4 !4 ' 4"' > # "' < ' 4 "4 ' 4 *' 6 ' ' E6" ' ' I ' = A' =? ' DCAD@C ' ? A' AC 1AC' GF F

W'D 0 233/(# $ ' 49/' D ' E' ! /2' I ' 1' GN W D 24' */=-' 49+ '' & J/' #/+(-' &' 49/' 2&&/ '1/' 7 +-' 12 ; ; 44/ :' +&4/(49/' GA49' 2& <*#' . EY I ' //' J2*' . ' "' DH R B' 9 -' 1*+<=/' -' 4+0/ ' "&(2 ;' 49/' D E ! /2' I ' 1' GN' =' E' ? N ! /2' I ' 1' AA' = E W D' ? D **' I ' + ' :' ; /4 ' 1' ED' =' I' ? + ' :' . M ' . ' /4 ' 1' YY' =' G' -' 42' 9+(:' *+32<(' 1 ' =//' ' "' A. ' J2*' . ' "' EM' E. W.D' 24' */=-' 49+ '' & J/' #/+(-' &' 49/' 2&&/ '1/' 7 +-' 12 ; ; 44/ :' +&4/(49/' GA49' 2& <*#' . EY I ' //' J2*' . ' "' DH W(D' 9 -' 1*+<=/' -' /7 ' 4' 7 **' ; //4"/(=2 '' 7 49' ; / '+1/-' 2& J 2*/ ' 1/' 42' 49/' "/(=2 '' 2(3# 49(/+4-' 2& +11<=+4 2 '' 2& 1(; /=' ' :<1/' 249/(-' 42' /V/1<4/' : // :=' 3 **=' 2& /V19+ ') / ' 2(249/(=/1<(4 /=' = 42' 9+(:' *+32<(' 1 ' =//' J2*' . ' "' EM' E.' ? . '" ' A. W=D' 9 -' 1*+<=/' -' /7 ' 4' -' '4/ ' : / :' 42' ; //4 1+=/-' 79/(/' +' */44/(' ; +# 3/' =/ ' 4 3# 2 ' /' "/(=2 '' + ' :' ; +# 12 ' 4+ ' ' ; / '+1/-' 2& '6<(# 3# + ' 249/(' + ' :' 42' (/ ; 2J/' 49/' :2<34-' 211+= 2 ' / :' 3# /V' & ' 10&2(: ' I' ' ' ' GGD' + ' :' =/ /) ' & ' ; 49 ' . / ' ' ' A. M ? + ' :' +*=-2' 42' ; //4 /+=/-' 79/(/' "(2"/(4# ; +# 3/' : / ; 2 : / :' 3# 2 ' /' 42' 3/' 1+<=/ :' 3# + ' 249/(

YG. ' 79/(/' "/(=2 ' -' 3# J 2*/ ' 1/' 42' 49/' "/(=2 ' ' 2(3# 49(/+4-' 2& +11<=+4 2 '' 2& 1(; /=' ' :<1/' 249/(-' 42' /V/1<4/' : // :=' 3 **=' 2& /V19+ ') / ' 2(249/(=/1<(4 /=' = 42' 9+(:' *+32<(' 1 ' =//' J2*' . ' "' EM' E.' ? . '" ' A.

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5C ? D= ? F@ @ A?E E@>C@@ =?E = @ AC @ I@1AC@ @ 1= =C@ D ? F=I @ <@DC ? D ? F@1C E@> !@@ ; =?E = @ AC @ =1 @C F@1= N@] @D C@ @ B@C d =C@ =I @ A J DC A?J @? 1AC =? @C J ?A @] @@E ?> GA @=C I @ 9A1 F@ &1>3

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&49/
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4+0 ')

F@ =< ?> J = I@ A1 JA?@ AC >AAE 7A1 =? B= @ F@ B= @ F@C@1AC@ A1 F@DCAD@C =<@?' b @ J J = @C = $ =D@?? = G@ = = =DA ?E 1AC I @] AC @E J =<@ =CAII@C ; F@ > A1 F@ A11@? @ I@ ?> F@ 1AC @ =?E @CCAC ROB F F@ =< ?> A1 = D A1 D=D@C GF F A? = ?@E = J@JAC=?E J A1 = J A1 JA?@ E @ A F@ DCA @ AC F= I@@?' F@ E 11 @? N d A J @ F ?> J I@ =<@?' =?E J I@ A1 AJ@ B @% 7X3 A F@CG @ F@ A11@? @G I@ A? F= A1 =?= = G F ? @? A CAI ; I ?@@E ?A I@A1 F@B= @A1 =? <?AG?' A ?% @B@?' A1 =1=C F ?>' 163

:<4 4 ; <=4 3/ &=2 ; /J+*</ J' :4+0/ '' (2 ;49/ *2==/=2 '' 2& 49/27 '/(

F@ DCAD@C =<@?' J ?A A? I@A1 AJ@B= @% I ? J I@ =<@?'1CAJ F@D@= @=I@DA @ A?A1 F@AG?@C & F@C@! F@ DC A?@C F=E AI = ?@E =?A @A1 F=?E1CAJ =>@? ' =?I FC@=T @? ?>G F =<? 1@F@ E A F FCA= A =<@ =G= F 1@ ; =?E =DD@=C@E F= F@DC A?@C F=E1 C? F@E F@D=D@C =?E ?<G F GF F G= GC @?% =?E F= F@D=D@C G= ?@B@C A A1 F@C DA @ A?; G= FA E@?' ?A A I@CAII@C F@ZE>@ G@C@ A1 AD ? A?' F= F@ ?A @G= A1 ?A B= @ ; F= = F@ @> = C@ = F@ J@A1D= ?>' F@ -' @A -% 8% % GE @C@I F@ @= ?> =' FA @ ?' = A?G= J =E@1@A? % A E ?A DA I F=B@ ='= @ <@ F ? ?' A? @JD = A?% 'G!= ?A G F ?' F= 'A1 5=C =J@? ; F= F@?A1@E E ?A % A?' F@1= @A1 % J DAC @ F@C =' >@?@C= AC =' D@ = DCAD@C ? ?' F@ DCA @ AC ; =?E F= ' &!=' A1=C 1CAJ I@ ?>A1 =? F@ @= B= @ A F J % F= F@ F=E ?A @B@?' F@ DCAD@C A1 F@ D=D@C A?GF F G= GC @?% = =DD@=C@E F= IA F F@ D=D@C =?E ?<G@C@ F@ DCAD@C A1 F@ DC A?@C% =?E

" 9 1*+<=/ 4+0/ '&(2 ;49/ GM 9/72(: 0)22:=(+7 2(249/(; +4/(+*= $ G. 24 1 AI = . D? 3<4 &2(49/72(: +&4/(0 "/(=2 '+ "(2"/(4#$ +(/ 2 ; 44/: 049/2( ) '+ =<36/14 2& + 4(<=4 $ '49+4 +=; +' &/=4*#& +**) 7 49 '49/=/4/(; = =/14 2 '49- 72(: 0 2( ) '+**# '49/"2=P W] 0 2* . " . EA 42 49/ "(2P =/== 2 '2(<' :/(49/12 '4 2 2& +'# "+(4# $ 1//:)= +) + '=4 +11/==2(/=' =//J2*' . +(/ =<3=4 4<4/: ' '' 2(:/(42 /3(+1/ " .DI ' O 249/(1+=/ 49+' 492=/ 79/(/ 0 4(<=4 $ "0 = '=4 YN . +*/' AHG . 9+ /V =4/: 2 +*=2 '=4/+:' 2& 049/ +70 ' '1 HI =' .Y' I' *+1 2(+ "(21//: 49/(/2& (/="/14 J/*#' +' :' +'#P GIH' G +=4 ' '1 .Y' =' .GA " ' DMD 49 ')' +1T< (/:' 3# =<19 "(21//:=$ 49/ W## /V <)*/#' A ' ' . YMG 72(:0 +'#49 ')' +1T< (/:' 3# =<19 12 P !<(' /#' J/(=2 '' 2(/V19+')/' 79/49/(; : /P W] 0 9 "2/S 1+=/' G /+19 YDH YEM : +4/*# 2(249/(7 =/ $ +(/ <=/:? =2 49+4 W+0) ' ' HIN 927/J/(; X # /V19+')/ ; +# 9+J/ 3// +(0/ ' 4 4 D 5 /' +*=2 ; +:/ '' 49/ "(2"/(4# +' # &(+<:<*/' 4 /V *+(0 .E. D : ="2=+# 2& 49/ "(21//:= <*4 ; +4/*# 23P 5. 4+ '/:' ; +# 3/ '1*<:/:' 7 49 '49 =1*+<=/

F@' E@ B@C ' A1' ' I ' F@]f' A' F@' D !A @ AC' A E' ?A ⅋ ?E@C' F@' C J =? @ ⅋ I@' A? E@C@E' = ' B@ ?>' ' ?' F J ; F ' F= ' 1' ' F=E⅋ = ' ' G= ' =' DCAD@C ' A1' GF F' F@' G= ' ?@B@C ⅋ @B@?' 1AC' =?' ? =? ⅋ ? ' F@' D@= @=I @' DA @ A?⅋ ' A E' ?A ' I@' A? E@C@E' = ' DCAD@C ' =<@?' 1CA J' F ' D@C A?⅋ A' = ' A' A? @' F@' C J @' A1' CAII@C ' N d ⅋

F@' DC A?@C ' G@C@' ?E @E' ?E@C' F@' ' ' ' Y 4 ' :⅋ ' ' <' ⅋ 1AC' 1@ A? A ' E@ J =?E ?>' A1' * C ' @@⅋ G F' J @?= @ ⅋ =' E@@E⅋ =?E' =' B= =I @' @ C ⅋ =?E' ' =DD@=C@E' F= ' F@ ' F=E' E@ A @E' F@' DCA @ AC' ? A =' FA @⅋ =?E' F@?' 1AC @E' F J ' ? A' =' @ @E' D = @⅋ A' A? C @E' F= ' ?A' C @ ' A E' I@' F@=CE⅋ GF@C@' F@ ' D F@E' F J ' EAG?' =' I@? F⅋ =?E' =' F= ?' G= ' D= @E' = CA f F ' IC@= ' =?E' =' CAD@' CA 'E' 1 ' ?@ <⅋ =?E' F ' @> ' G@C@' 1= @?@E' G F' =' ACE' A' AJ@' =D @ ' ?' F@' >CA ?E' ; GF ' F@' G= ' A' 1= @?@E⅋ GA' F@@ ' A1' D=D@C ⅋ D@? ⅋ =?E' ?<⅋ G@C@' I A >F ' A' F J ⅋ =?E' F@' G= ' AJD@ @E' A' GC @' A?' F@' D=D@C' A' ICA >F ' A' F J ' =' F@ <' 1AC' =' J' A1' JA?@ ⅋ =?E' =' @ @C' C@b @ ?>' @C = ?' E@@E ' A' I@' E@ B@C@E' A' F@' I@=C@C ; F@ @' EA J @? ' C@ J = ?@E' G F' F J ' 1AC' !F= '' =?' FA C' GF @' F@' GCA @' AJ @' @ @C ⅋ =?E' ' G= ' A? @?E@E' F= ' = ' F@ ' G@C@' ?' I ' DA @ A?' E C ?>' F= ' J @⅋ F@' = @' G= ' E ?> F=I @' 1CA J' F@' DC@ @E ?>' A?@ ' 5= @ A?⅋ ⅋ 7 * C ' @@' G= ' F= ?@E' =?E' D=E A <@E⅋ =' CAD@' G= ' D ' CA ?E' F ' ?@b<⅋ =?E' F@' A E' ?A ' JAB '' F=?E' AC' 1AA ' @] @D ' Z ' A' GC @ ; F@ ' IC ?>' F J ' D@? ⅋ ?<⅋ =?E' D=D@C⅋ =?E' F@' GC @ ' F@' ACE@C ' ; F@' F=E' F@' D=D@C ⅋ ' G= ' C @⅋ ?' F ' F=?E ; I ' F= ?@E' = ' F@' G= ' ' ' DA I @' A' A? @ B@' F= ' F@' F=E' F' =' D@= @=I @' DA @ A?' A1' F@ J ' = ' A' I@' = ' I@C ' A' EA' GF= ' F@' D @= @E' G F' F@ J ' V AC' F= ' ' F@' J @=? ?>' A1' D@= @=I @' DA @ A?' ' =??A ' D@ ! @ B@' F@' E 11@C@? @' I@ G@@?' F@' = @' A1' A C A ' =?E' F@' DC@ @? ⅋ @] @D ' F= ' ⅋ F@' = @C' ' F@' A?>@C' A1' F@' GA ' F@' >CA ?E' A1' F@' E@ A?' ?' F= ' = @' J ' >AB@C?' F@' E@ A?' A1' F@' A C ' ?' F ' = @ ' CAII@C ' =??A ' I@' AJ J @E' ? @ ' F@' !D@ A?' F= ' F@' DCAD@C ' ?' F ' D@= @=I @' DA @ A?' A' EA' G F' ' = ' F@' FAA @ ' 1' * C ' ⅋ @@' F=E' ICA >F ' F@' EA J @? ' @=E ' GC @?⅋ F@' = @' GA E' F=B@' I@@?' E 11@C@? ⅋ I ' F@' EA@ ' ?A ' GC @' F@J ' ? ' F@' ' F= ?@E Ĥ 1 3

' F@' 1' =< ?>⅋Ĥ ?@ @ =C ' ?' F ' A11@? @⅋ ' J D @E' F= ' F@' CAII@C' J ' I@' ! E4 !4 ' A1' F@' F ?>' =<@?' A' F= ' 1' =' J =?⅋ F=B ?>' =' D C @' 1= @?@E' A' F ' > CE @⅋ I@' = = @E' I ' =' F @1⅋ =?E' F@' F @1⅋ ?!ACE@C' F@' JA @' @= ' A' =<@' F@' D @⅋ ' F@' > CE @⅋ =?E' F@' D C @' F@C@I '1= ' A' F@' >CA ?E⅋ F ' ' ?A' =< ?>' ; 1AC' F@' F @1' ?@B@C' F=E' F@' D C @' ?' F ' DA @ A?⅋ 1#3' ?E⅋ DA?' F@' =J @' DC ? D @⅋ ?' =' = @' GF@C@' ' =DD@=C@E' F= ' F@' DC A?@C' ADD@E' F@' DCA @ AC' = ' F@' G= ' =CC ?>' =' 1@= F@C' I@E' A?' F ' FA E@C ⅋ =?E' A E' F J ' A' = ' ' EAG?' AC' F@' GA E' FAA ' F J ⅋ =?E' F@' DCA @ AC' = ACE ?> ' = E' F@' I@E' A?' F@' >CA ?E⅋ I ' F@' DC A?@C' G= ' =DDC@F@?E@E' I@1AC@' F@' A E' =<@' ' D' A' = ' A' C@ J AB@' ' 1CA J' I@' DA ' GF@C@' ' = ; F@' Z E>@ ' G@C@' A1' AD ? A?

" B 9 "2/S 1+=/ ' G /+19 ' YDH ' 9/' =4(//4 $ //' /V & ' +(4 ' Y ' ' .MY ' &2(; ' 2& 49/' ' 24/' 7+=Q 0 7Z ; 2 ' 49 =' +&4/(.' D 5 ' R :+4/' ' " (2 ; =/' 42' "+# 42' =' +(W1⅋ /V ' : 7+(:=' Y' MD' ' ' AG. ' 9/(/=+' * "2/ ' 2(2(:/(' 49/' =< ; ' 2& +44/=2 ' ' ' +' :' 2=+ ' T</4 ' 472' 492<=+ ' :' "2< ' :=' =4/(* ')' &2(J+*</' R B' H ' =4 ' YN ' :' +*/ ' AHH (/1/ J/ : Q 29 ' ' 2<(42#' V/ ' :2'

W -

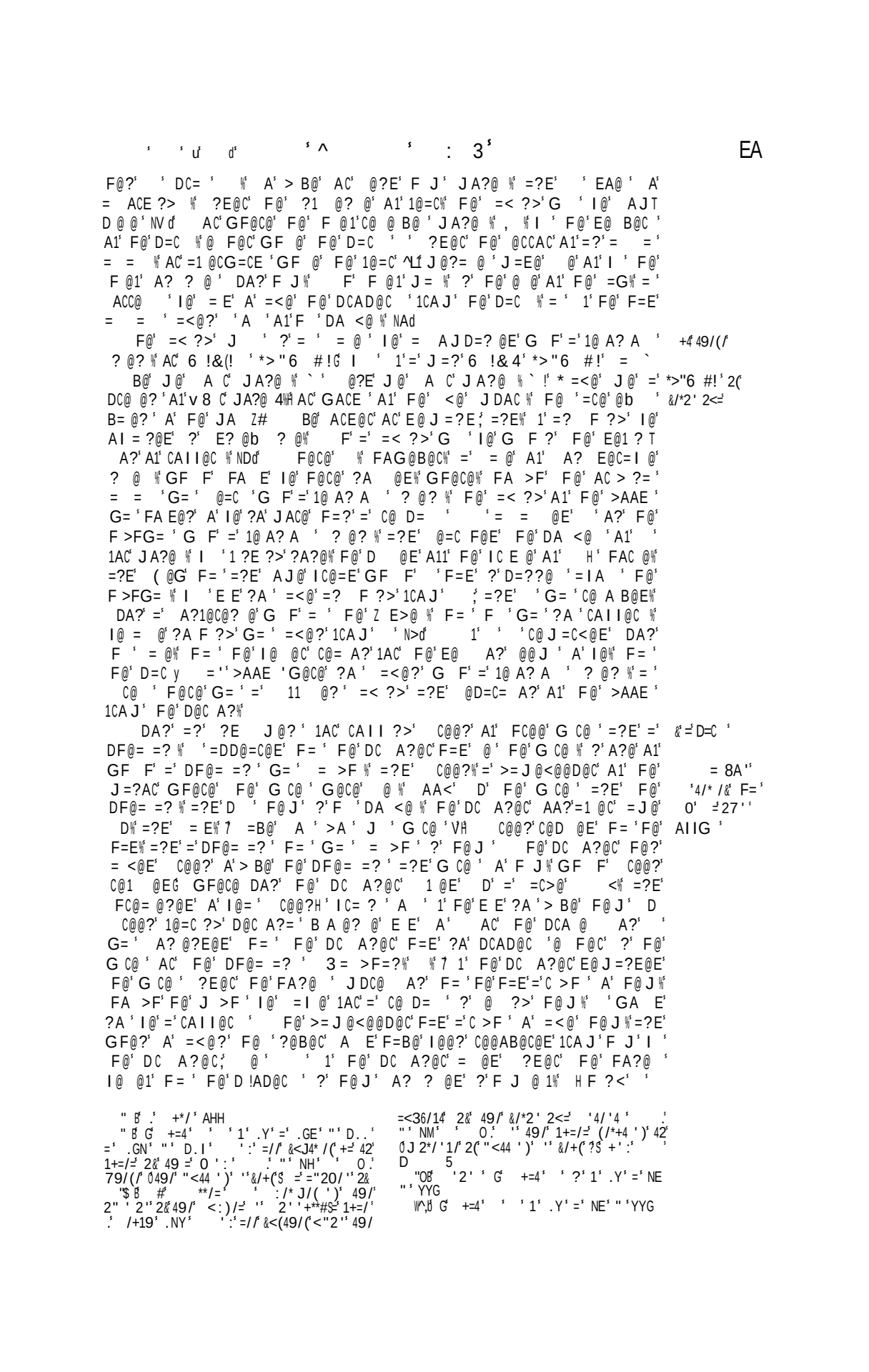
' (233/(# 1+ ' ' 2f 3/' 12 ; ; 44/ :' <' */=' 49/' "+(4# 9+=' 49/' "(2" /(4# ' ' 9 =' "/+1/+3*/' "2==/= 2 '' 42' :2 7 49' 4' 79+4 9/' * 0/=

9/' 4+0 ')' ; <=4' 3/' =<19' +=' 42') J/' 49/' (233/(+' "2=P =/== 2 '' 2& 49/' 49 ')' 4+0/ '

EI 8 '6 5' ' ' ' $ % &' J

F= ' F@' A11@? @' A1' CA I F@C ' G= ' ?A ' AJD @ @E% N@d ' 1' ?' F@'
1AC J @C' = @' F@' F @1' F=E' =<@?' D' F@' D C @' 1CA J' F@' >CA ?E%
=?E' =1 @CG=CE ' @ ' '1= ' ?' F@' C >> @% F 'GA E' F=B@' I@@?' ='
=< ?>% FA >F' F@' F=E' ?@B@C' =<@?' ' D' =>= ?' ; 1AC' F@' D C @'
<4' 4' '// :' GA E' F=B@' I@@?' A? @' ?' F RDA @ A?' NMd' ?E' ' ' ?A ' ?@ @ T
'24 (/ ; + " ' =C ' F= ' F@' DCAD@C ' FA E' A? ? @' ?' F@' DA @ A?' A1' F@'
* = "2=/= 2' F @1 ' F % GF@C@' =' CA I I@C' AA<' =' D C @' A1' J A?@ '1CA J' =' >@? @T
J =?% =?E' C@ C?@E' ' A' F J' J J @E = @ % = ?>% 1' A ' B= @'
A C' D C @% A ' G ' D @= @' A' =<@' ' I= <% =?E' > B@' J @' F@' A?T
@? ' A1' ' I ' G= ' =DDC@F@?E@E' =?E' @ C@E' I@1AC@' F@' >@? @T
J =?!F=E' J @' A' > B@' F J' F@' A? @? ' A1' F@' D C @' ; F@' A C '
F@ E' F= ' F@C@' G= ' =' >**! ! ' 6 ! 2' ^8 AJD @ @R F@' A11@? @%
= FA >F' F@' DC A?@CH ' DA @ A?' A? ? @E' A E ' 1AC' =?' ? =? % R3B
?E' ?' =' = @' GF@C@% GF @' =' =E ' G= ' @DD ?>' ?4 A' F@C' =CC =>@%
F@' DC A?@C' ?= F@E' = ' F@C' E = J A?E' @=C C ?>% =?E' @D=C= @E' '
1CA J' F@C' @=C' I ' @=C ?>' F@C' @=C' @? C@ ' FCA >F' ; I ' F@C@' G= '
?A' DCAA1' A1' F@' @=C C ?>' @B@C' F=B ?>' I@@?' @@?' ?' F ' F=?E% =?E%
DA?' F@' =E H ' =CC B= ' = ' FA J @% ' G= ' 1A ?E' = J A?> ' F@' C ' 1'
F@C' F= C' ; F@' Z E>@ % DA?' F@' = @' I@ ?>' I J @E' 1AC' F@ C'
A? E@C= A?% G@C@' = ' A1' AD ? A?% F= ' F@C@' G= ' =' **! ! ' 6 R* 2'
1CA J' F@' D@C A?' A' A? @' CA I I@C ' F@ ' FA >F ' F=1' ' G= '
11 @? % = ' F@' @=C C ?>' G= ' ?' F@' DA @ A?' A1' F@' DC A?@C'
Y @D=C= @' 1CA J' F@' =E H ' D@ A?% FA >F' I ' 1AC' =' J A J @? % =?E'
FA >F' F@' A E' ?A ' C@ = ?' % I ' DCA I=I ' A ' ' =>= ?' F@' = J @'
=? ' "#B ' FA E% FAG@B@C% I@' AI @CB@E% G F' C@ D@ ' A' = @ '
A1' F ' E@ C D A?% F= ' FA >F' ' J = ' F=B ' I@@?' ' C J @C ' FA E@?'
F= ' =' EE@?' =< ?>' AC' ?= F ?>' A1' =? ' DCAD@C ' 1CA J' =' D@C A?'
?=G=C@ ' G= ' 11 @? % F@' A? C=C ' EA C ?@' =DD@=C ' A' I@' ?AG'
@ =I F@E' $ =?E' F= ' ?A' =< ?>' I ' B A @? @' G % = ' F@' DC@ @?'
E= % I@' A? E@C@E' = ' 11 @? ' A' A? @' CA I I@C % ? @ ' AJ @'
?Z C ' I@' EA?@' A' F@' D@C A?% = ' ?' F@' = @' = ' @E% AC' ? @ '
F@C@' I@' AJ @' DC@B A ' C >> @' 1AC' F@' DA @ A?' A1' F@' DCAD@C %
AC' AJ @' 1AC @' @E' A' A I = ?' ' "B
& F@C@' F@' A11@? @' A1' CA I I@C ' ' A? @' = = ' AJD @ @E' I '
=< ?>' F@' DCAD@C ' A1' =?A F@C' ? A' F@' DA @ A?' A1' F@' F @1% '
=??A ' I@' D C>@E' I ' =? ' I @b @?' C@ E@ B@C % "*B' F % 1
' C@b C@ ' ' A' E@ B@C' F ' D C @% =?E' F@' E@ B@C ' ' = ACE ?> %
GF@D' % 1 ?E ?>' A? ' GA' F ?> ' ?' % > B@ ' ' F J' =>= ?% @ '
F ' ' =' : 3' I ' CA I I@C ' "#B
9/(/' ; +# 9/' e A ' A? ' =' =< ?>' ?' 1= % I ' =' =< ?>' ?' =G!% ' 11 @?' A'
+' 4+0 ')' '' A? @' =' CA I I@C ' 1 3' ' F= % F@C@1AC@% I@@?' FA E@?% F= ' 1'
*+7' F @B@ ' = = <' =' J =?' A' CA I' F J % =?E% 1 ?E ?>' @' AC' ?A F ?>'
=I A ' F J % 1AC @' F J ' I ' J @?= @' A1' E@= F' A' G@=C' A' 1@ F' F@ J'
JA?@ ' & F F' F@' EA@ ' = ACE ?> % =?E' E@ B@C ' ' A' F@ J ' GF @'
F@' 1@=C' A1' F@' J @?= @' ' A? ? @ ' DA?' F J % =?E' F@ ' C@ @ B@'
% F ' ' =' 11 @?' =< ?>' ?' =G ' NJ d' ?E' 1' DA?' ' = = ?>
' % =?E' I EE ?>' F J ' A' E@ B@C' F ' D C @% ' C@1 @' A' EA' A% =?E

' W/b' /V' ' L+((/**' .' /+19' HGG' '24/ +O/(S' 1+=/' : ' GNM' 2(' /(S' 1+=/'
Ww b' H' '=4' YN' .' +*/' AHH G' +=4' ' ' 1' .Y' =' .G.' "' DMH'
"3B' /+4S' 1+=/' .' /+19' GGE "' NM' /V' +=2' ' "' N.
cB +" 'S' 1+=/' .' /+19' HGM' W=//' "*B' .' +70 [' ' 1' HI' =' G
/)' ; "=2' ' /+* =' ' ' IG.' ? W[b' .' +*/' AHH
3' B "B' +1+<*/#S' 1+=/' .' /+19' GED "C% H' '=4' YE' K.' +*/' AHG
W ; b' : ' 3 : ' G' +=4' ' ' 1' .Y'
=' .GN' "' D.I



?A = CAII@ 1 FA? @B@C F@ @E J@C@ = = DC@ @? @ GA E I@ CAII@C F@b @ A?1AC F@Z C G F@ F@C F@ DC T A?@C E E FA?@ I@ @B@ F@ F=E = DCAD@C ? F@ ?=C@ =?E DF@= =? AC ?A N d

& F@C@ A? =? ?E J@? 1'C CAII@C = DD@=C@E F= F@ DCAT @ AC AG@E F@ DC A?@C JA?@ =?E F=E DCA J @E A D= 'F J = =?E I@ ?> EC ?< ?> = F@ DC A?@CH ??F@ DC A?@C DC@ @E F J 1AC D= J@? =?E A? C@1 = ?E @E F J A >A ? A = DC B= @ CAA J =?E F@C@ =1 @C C@D@= ?> F E@J =?E 1AC JA?@ E@ =C@E F= F@ GA E F=B@ <?A <@E F J EAG?=?E C @E A =<@ 1CA J F J =?E F@ DCA @ AC = E 1 F@ GA E @ 4F J >@ D F@ GA E > B@ F J = F@b @ 1AC : =?E E E D F@ D{ A?@C FAGT @B@C C@D@= @E F E@J =?E 1AC JA?@ E@ =C ' F@ GA E F=B@ =?E <?A <@E F J EAG? =>= ?=?E F J A?@ =CADD@E A A1 DA <@ I G= ?A <?AG? GF= I@ =J @ A1 ; C @ = E F@ FA >F F@ Z C A E F=CE A?B A1 = 1@ A? A CAII@C F@ @ @? @ A1 F@ A11@? @ F=C>@E G= F@ 1@ A? A ? @? =?E F= G= JDA I @ A 1 ?E A? F@ @ 1= R B

==+<*4 7 49 '4/ '4 42 (/12J/(; 2 '/# <' : /(+ =/ ; ,3*+ '1/ 2& ( )94

F@ DC A?@C G= ?E @E 1AC = = ?> J A < G F ? @? A CAI F J = DD@=C@E F= J A < H 1= F@C F=E I@@ <= = 1= C = A?> @ A? = 1@G E= I@1AC@ F@ = @>@E A11@? @K =?E = D@C A? F=E F@C@ > B@? F J @ @B@? AB@C@ >? 1AC F@ D CDA @ A1 I ?> = FAC @ ; =?E F@ 1= F@C D F@ JA?@ ? F DA <@ =?E C@1 @E A > B@ I= < F@ D@C A? GFA >=B@ F J F@ JA?@ 1> AG@E F J A =?@ ? C =?E F@C@ ? AJD=? G F F@ DC A?@C = = @E F@ 1= F@C =?E @?E@=BA C@E A >@ F@ JA?@ A 1 F DA <@ J A < =J@ D =?E = E F= 4 F@ Du A? GFA >=B@ F 1= F@C F@ JA?@ G= F@ J =? F= F=E CAII@E A @C@ = @@<' 1= C =?E F@C@A? F= D@C A? C=? =G= F@ DC A?@C = @E F@ ?@] E= = J A < H 1= F@CH =?E E@J =?E@E F@ @ @B@? AB@C@ >? ; I F@ 1= F@C C@1 @E A > B@ F J F@J =?E = E F@ GA E > B@ F@J A J F@ J =? 1CA J GFA J F@ F=E C@ @ B@E F@J 1 F@ GA E AJ@ =?E = < 1AC F@J 1 @CG=CE F@ DC A?@C =G J A < C@ @ B@ = @@<' 1= C @B@? AB@C@ >? 1AC = AG F= F@ F=E A E =?E = E 75= J @ F@ @ @B@? AB@C@ >? A AG@ J @H =?E F@?' <?A <@E J A < EAG? =?E D F F=?E ? A J A < HDA <@ GF@C@ F@ F=E @@? F@ AB@C@ >? D = @E I G= DC@B@? @E 1CA J >@ ?> F@ J ; =?E 5=C<@ F@ E F= F@C@ G= AA J F @J I =? @ A1 = C >F A = J F@ AB@C@ >? A Z 1 DCA @@E ?> G F F@ = @ 1AC F@ 1@ A? 1>3

9/(/ 49/ "(2" (4# 9+= 3// 4+0/ ' < ' : /(12*2<(2& + "<(19+=/

AJ@ b @ A? = A F@ 1@ A? A ? @? F=B@ =C @? GF@C@ F@ DCAD@C F= I@@?' =<@?' ?E@C A A C A1 = D C F= @ F % FA >F ' E@ =C F= 1 = D@C A?' I 1AC @% AC FC@= % AJD@ =?A F@C A' > B@ F J >AAE % =?E I G= A1 A A C AI >@ F J A =<@% AC 1 F@ A11@C% @ F=?' F@ B= @% ' CAII@C ; 1 3 @ ' F= I@@?' EA I @E GF@ F@C F@ 1AC ?> = F > @C AC A F@C F=DJ =?' A @ F G=C@ % =?E > B ?> F J Fu 1 B= @ A1 F@J % = J A ? A A F@ ?A =

" L O ; +** ! *2<1/=4/(/ '4 == .EGE ' M ' ! ' M H ' ' ' IMN' //' = ; *+('/+=/=' D 5 " L 3 ' / ; ; ')=' I' ' 'L ' AM' W]O /) ' 2 : / ' : ' ' ' ENA 9/=/' 1+=/= +112(:' 7 49' 49/' 2 ; +'' +7 ' O <' +* T<2' /((2(/' : <14<=' (/ ; ' =<+ ; ' /==/' /V =4 ; + '=' /4' ; " ; : / '= 6<(=' /2 +' ; 2' (+"</(4' T<+=' : 2 ; '2'* 1/+4' /4 + ; " /(J ; ' (/ ; '=<+ ; '+<&/((/' +' "2= =/==2(3<=' +3=2*J : /3/4? 1<' =1 * 1/4' 12' J/ ' / ' = /=4 ' /1' &<(4' 4/ ' /(' /< ; ' T<' /2 : / ; ' 921' +' ; 2' (+"</(4 $ <=4' '=4' 3' J' 4' G' =' . WJ /V ' ; 2 '=' G' +=4' ' 1' .Y' =' .GE' "' D.G

F=?>@%' 1@ ' A' F@' >CA ?E%' =?E' F= %' DA?' F ' A11@C ?>' A' =<@' ' D%' F@' F @B@ ' FC@= @?@E' A' <?A <' F ' IC= ? ' A %' DA?' GF F' F@' E@ @E' 1CA J' =< ?>' D' F@' J A?@ %' =?E' F@' F @B@ '7 F@?' =?E' F@C@' .!;"6& #!6 '' AA<' ' D' =' >C@= ' J =ZAC ' A1' F@'Z E>@ ' F@ E%' F=' @B@?' I ' F ' = @ J @?' ' 1'= ' ?A ' 11 @? ' @]DC@ @E' ?' F@' D@ = ' B@CE ' F= ' F@' F @B@ ' AA<' D' F@' J A?@ ' ?' F@' >F ' AC' DC@ @? @' A1' F@' AG?@C%' =?E' F= ' F@ ' A E' ?A ' ? @?E' %' FA >F' F@C@' @@ J @E' A' F=B@' I@@?' @B E@? @' @?A >F' A' F=B@' G=?H=? @E' F' =' 1 ?E ?>%' N>Od ?' =' = @' GF@C@' CAII@C %' I ' D ?>' ?' 1@=C%' J =E@' =' G=>>A?@C' EC B@' F ' G=>>A?' 1CA J' F@' F >FZB= ' ?' F@' E= ' J @%' I ' E E' ?A ' CAI' F@' >AAE ' ' ? >F %' J F' EA I ' =DD@=C ' A' F=B@' I@@?' @? @C = ?@E' AJ@' F=B ?>' FA1E@?' ' A' '@' =' CAII@C ' 1CA J' F@' 1 C ' 1AC @%' I ' A F@C ' F=B ?>' A? E@C@E' F= ' F@' G=>>A?@CH ' DA @ A?' A? ? @E' ' F@' >AAE ' G@C@' = = ' =<@?%' ? @ ' F@' G=>>A?' G@C@' EC B@?' =G= ' I ' F@' F @B@ ' F@ J T @ B@ ' 7<3

& F@C@%' A?' =?' ?E J @? ' 1AC' CAII@C %' ' =DD@=C@E' F= ' F@' DCAT @ AC' >=B@' F ' I ?E @' A' F ' ICA F@C' A' =CC ' 1AC' F J %' =?E' GF @' F@ ' G@C@' >A ?>' = A?>' F@' CA=E' F@' DC A?@C ' = = @E' F@' DCA @T AC%' DA?' GF F' F ' I !A F@C' = E' EAG?' F@' I ?E @' ?' ' @' CA=E%' =?E' C=?' A' F ' = =? @%' =?E' A?@' A1' F@' DC A?@C ' F@?' C=?' =G= ' G F' F@' I ?E @' ;' 3 = >F=?%' %' ? J = @E' =?' AD ? A?' F= ' ?E@C' F@ @' C J =? @ ' F@' ?E J @? ' G= ' ?A ' ?=I @%' = ' F@' I ?E @' G= ' ?' F@' DA @ A?' A1' =?A F@C' D@C A?' = ' F@' J @' GF@?' 1 @' = = ' G= ' AJ J @E' >FG= ' CAII@C ' G= ' =' 1@ A? A ' =< ?>' A1' F@' DCAD@C ' A1' =?A F@C' I ' B A =? @' =>= ? ' F ' G %' @ F@C' 1CA ' F@' D@C A?' AC' ?' F ' DC@ @? @' F@' I ?E @' ?' F ' = @' G= ' ?A ' ?' F@' DCA @ ACH ' DA @ A?' 1' F@ @' DC A?@C ' ? @?E@E' A' =<@' F@' I ?E @%' GF ' E E' F@ ' = = ' F@' DCA @ AC%' =?E' ?A ' F@' D@C A?' GFA' F=E' ' V1!3

' :' 49/' 4+0 ')' ; ' =4 ' 24' "(/1/ : /' 49/' J 2*/ '1/ ' 2("'<44 ')' ' &/+(

' J = ' = A' I@' AI @CB@E%' G F' C@ D@ ' A' F@' =< ?>%' F= ' ' J ' ?A %' = ' ' FA E' @@ J %' DC@ @E@' F@' B A @? @' AC' D ?>' ?' 1@=C' ;' AC%' C= F@C%' F= ' =' I @b @? ' B A @? @' A2$ D ?>' ?' 1@=C' G ' ?A ' ?]=<@' =' DC@ @E@? ' =< ?>%' @11@ @E' =?E@ ?@ %' AC' G FA ' @ F@C' B A @? @' AC' D ?>' ?' 1@=C%' = J A ?' A' CAII@C ' F %' GF@CD' =' F @1' =?E@ ?@ ' A @' =' D C @%' =?E%' A?' ' I@ ?>' E T AB@C@E' ?' F ' DA @ A?%' E@?A ? @E' B@?>@=? @' =>= ? ' F@' D=C ' 1' F@' FA E' E=C@' I' D@=<' A1' %' =?E' F@?' CAE@' =G= %' ' G= ' FA E@?' A' I@' J D @' =C @? ' A? %' =?E' ?A ' CAII@C %' =' F@' GAC E ' A1' J @?= @' G@C@' @E' =1 @C' F@' =< ?>' A1' F@' D C @%' 1C3' %' 1' F@' D C @' F=E' I@@?' AI = ?@E' I ' J @=? ' A1' F@' J @?= @%' F@' A11@? @' GA E' F=B@' =J A ? @E' A' CAII@C ' 1D 3

W^%' /V' ' L(+'1 =' G' 4(' .M.A' /V' ! (/#' G' +=4' ' ' 1' .Y' =' .GY' "' DME' ' ' '' /V' &' L(+'1 =' 49/' <:) /=' 1*/+(*# 492<)94' 4' +' 1+=/' 2&')(+' :' *+(1/ '#' +' :' 49/(/&2(/' 72<*:' '24' : =P 19+() /' 49/' "(=2' /(=' 3<4' : (/14/ :' +' ' /7' ' : 14 ; /' 4' 42' 3/' "(/&/((/ : ' 12' = : /(')' 49/ ; =/*J/=' 12' & ' / :' 42' 49/' : 2<34' 2&' 49/' 6<(#' 79/49/(' 49/(/' 7+=' +' =< & 1 /' 4' 4+0 ') ' +' :' 49+4' 49/#' 12<*:' '24') J/' 6<:) ; /' 4' &2 +' *+(1/ '# W %' G' +=4' ' ' M' .Y' =' .GY' "' DMD' W %' /V' ' L+**27=' Y' ' ' ' AME

+<)9+' ' ' 9/' "(=2' /(=' 7/(/' 12' P J 14/ :' /&' +' = ; "*/' *+(1/ '#' Q ' 79/49/(' &' 49/' ' : 14 ; / ' 4' 9+ :' 3// '' &2((233 ')' 49/' 3(249/(' 792' 7+=' 1+((# ')' 49/' 3<' :*/ ' 4' ;)94' '24' 9+J/' 3// '' =<=P 4+ ' / : ' +=' 4' 7+=' 49/' J 2*/ '1/' 2&' 49/' "(=2' /(=' 49+4' ; +: /' 9 ; ' "<4' 4' :27 ' ' +' :' 4' 7+=' 4+0/ '' '' 9 =' "(/=/ '1/' /' /V' ' ( ) 94' :' '24/' " B.' "' ED' ' ' ! #%' +(; +' S=' 1+=/' :' L*+*/' AHI' . +70' ' M' 1' HI ' =' D W %' #' 2(:' +' =& /*:' '' 2' ' +**#S=' 1+=/ ' G' +=4' ' ' 2' .Y' =' .HM' "' DGY

(%

: 4 < F6 ! 2 7B26! < ! H4* < N6" '

?@ = JA?=?E @B@C=A F@C M ?ACE@C A AI = ?1AC F@J @B@ F@DCA F@C@G=CE > B@?I A1 5=C =J@?1AC=DDC@F@?E ?>CAII@C A? F@F >FG= % A? @C@E =D =?I GF F=CAII@C J >F I@ F@G A F@ @11@ @E DA' = JA?I =D@C A?? =J@E @@%GFA G=A?@A1F@D=C % A?1@E@C=@ % =?E GA C=?>@C DCA C@E I @@ G=@]DC@ 1A ?E F= = D A?'B= =D=C A F@ =>C@@J@? ; F= F@ A?T @? @E A D=C G F F JA?@ =?E>AAE ?E@C A A C=?E DC@ @? @ A1 =CAII@C ? =?E F= 1AC F D CDA @%=?E ?D C =? @ 2& F A? @? =?E =>C@@J@? % F@ G@? A =F >FG= = # @D 1ACE% =?E G= @E F@C@ F@ A A C=I @CAII@C G= @11@ @E F@Z E>@ G@C@A1AD ? A?F= % ?A E@C= A?A1 =G%?A CAII@C G= AJ J '@E DA?= JA?; =?E F@ C@= A?>B@?G= % F=F DCAD@C G= ? : =<@?=>= ? F B 1 3

(3

4 7 < ,!4 4"N> ! 2! W 6" P

F@GACE A1 F@E@1 ? A?% = > B@?= F@ I@> ?? ?> A1 F@ 1 F@ F=D @C% =C@ ?F@= @C?= B@% 7B A @? @ 4"D ?>?1@= ;H=?E BA<?@@2(=DD@=C % F=1 F@DCAD@C I@ =<@?I ! < "A1 F@ @ J@= =>= ? F@G A1F@D=C % F =< ?>G I@ 11 @?A A?T @CAII@C % NJd F@DC? D@%?E@@E%A1CAII@C B A @? @; I F= I@@?A1@?FA E@?% F= = B A @? @ ?A F@A? J@=?I GF F=CAII@C J= I@ @11@ @E% I F= J= = A I@ @11@ @E I 1@=C% GF F F@ = B A? E@C = A? C B@ B A @? @% 7 3 =DD@=C A F=B@ I@@?AJ@ J@ A? E@C@E F= 1@=C =?@ @ =C ?>C@E @?? = = @ A1CAII@C % @B@?? FA @ @11@ @E I = = B A @? @; NAd I 1 A% G I@DC@ J@E ?E F@C@ =C@ = @ A1 F E@ C D A?? GF F1@=C =?F=CE I@ DDA @E A F=B@@] @E; = 1 = J=?I@ <?A <@E EAG?G FA DC@B A G=C? ?>% =?E C DD@E A1F DCAD@C GF @ @? @ @ % F@ =??A G F DCADC@ I@ = E A I@D ? ?1@=C% =?E @ F= GA E ?EA I@E I@CAII@C % NDd

"B /V ' /* 2=4 .G. .GE 9/ 1+=/ 2& 2(:/' ." N. 7+= 14/:'2'49/"+(4 2&4* / (27'"? 3<4 (' <=4 1/ L2=4/(((/ ;+(0= <"2'' 4 +=: =P 4 ')< =9+3*/'<"2'' ;+'#)(2<':=L2=4 .GN

" B G +=4 1 .Y? = .GD "DME +':49/ +<492(4 /= 49/(/ 14/:' L2=4 .GE

" B 2''+**#$=1+=/':/+19 .NY G +=4 1 .Y = .HM "DGD /+'/$= 1+=/' G /+19 Y.N' G +=4 1 .Y = .HG "DHA

W2& L2=4 .GE 79/(/ 49/*/+('/:'7(4/(' =+#= 49+4 49/(/ +(/ 2" '2'= 49/ 3220= 79 19 =// ;'42 ; +0/ 49/1(1<;P =4+'1/ 2& &/+(''/1/==+(#3<4 49+4 9/9+:'' =//'' +)22:' '24/ 2& 2(:' 2*4 42 49/ 12'4(+(#+':49+4 9/7+= 9 ; =/*& J/(# 1*/+(49+4 49/ 1(1<;=4+'1/= 2& +14<+* &/+(' +4 49/4 ; / 2(49/ (233/(# '//:'24 3/=4(14*#"(2J/: R B L2=4 .GE I *+1 2;'G.I G +=4 + 1 .Y = .GE "D..

&49/' :/)(//' 2& J 2*/ '1/

& F' C@ D@ ' A' @' E@>C@@' A1' = = ' 7B A @? @%H GF@C@' @' =< ?>' '@11@ @E' I ' F= ' J @=? %' '=DD@=C ' A' I@' G@ ' @ @E' F= =%' EE@?' =< ?>%' AC' ?= F ?>' 1CA J ' =' D@C A?' ?=G=C@ %' ' ?A ' 11 @? ' F %' GF@C@' =' IA ' G= ' =CC ?>' =' I ?E @' = A?>' F@' C@@ ' ?' F ' F=?E%' =1 @C' ' = ' E=C<%' GF@?' F@' DC A?@C' C=?' D= ' F J%' =?E' ?= F@E' ' EE@? ' =G= %' ' G= ' FA E ?' F= ' F@' = ' G= ' ?A ' EA?@' G F' F@' E@>C@@' A1' 1AC @' =?E' @CC C' ?@ @ =C ' A' A? @' CA I I@C %' 7 3' ?E' F@' =J @' G= ' FA E@?' ?' =' = @' GF@C@' ' =DD@=C@E' F= ' =' GA' @' IA ' G@C@' =CC ?>' =' D=C @ ' A1' A F' A' A?@' A1' F@' ?? ' = ' = F%' 1AC' F@' D CDA @' A1' ' I@ ?>' =CC @E' I ' =' =>@ A= F' A' A?EA?%' F@' DC A?@C' = J @' D' EE@? %' ?= F@E' F@' A F' 1CA J ' F@' F@=E' A1' A?@' A1' F@ J%' =?E' C=?' A11X G G ' NCd' F@' = J @' EA C ?@' F= ' I@@?' F@ E' ?' 1A C' A F@C' = ' ' ; ?' A?@' A1' GF F' F@' F= ' =?E' G >' A1' =' >@? @ J =?' G@C@' ?= F@E' 1CA J ' F ' F@=E' ?' F@' C@@ ; N d' ?' =?A F@C%' =?' J I C@ =' G= ' ?= F@E' EE@? ' A ' A1' F@' F=?E' A1' =' GA J =?%' = ' F@' G= ' G= < ?>' = A?>' F@' C@@ ; N d' =?E' ?' =' F CE%' =' G= F' G= ' Z@C<@E%' G F' A? E@C=I @' 1AC @%' A ' A1' =' G= F DA <@ ; 7>3' =?E' ?' =' 1A C F%' =' G= F' G= ' ?= F@E' 1CA J ' F@' F=?E ' I ' = F ?>' FA E' A1' F@' C I I A?' =?E' <@ ' G FA ' A F ?>' F@' F=?E %' 7 3' ' 1' =?' ?Z C ' I@' EA?@' A' F@' D@C A?%' AC' @C@' I@' =? ' C >> @' I ' F@' D=C ' A' <@@D' DA @ A?' A1' F@' ZkAD@C ' I@1AC@' ' I@' =<@?' 1CA J ' F J%' F@C@' G ' I@' =' 11 @?' = = ' 7B A @? @ H F %' ?' F@' = @' GF F' F= ' I@@?' = C@=E ' J @? A?@E%' GF@C@' =?' @=C C ?>' G= ' ?= F@E' 1CA J ' =' =E H ' @=C%' =?E' F@' @=C' AC?' FCA >F%' =?E' I AAE' EC=G ?' I ' F@' 1AC @' @E%' ' G= ' FA E@?' A' I@' CA I I@C %' N Cd' A%' GF@C@' =' F@=B ' E = J A?E' D ?%' G F' =' AC<' C@G' = <%' G @E' B@C ' J F' ?' =' =E H ' F= C%' G ' G ' ' A @' 1C KK@E' =?E' CA?> ' C=D@E%' G= ' ?= F@E' A %' =?E' D=C ' A1' F@' F= C' AC?' =G= ' = ' F@' = J @' J @%' ' G= ' FA E@?' F= ' F ' G= ' =' 11 @?' E@>C@@' A1' B A @? @' A' A? @' =' CA I I@C %' 7?3' ?E' ?' =' = @' GF@C@' '=DD@=C@E' F= ' F@' DC A?@C' ?= F@E' = ' =' GACE' GF @' ' G= ' F=?> ?>' = ' =' >@? @ J =?H' E@%' =?E' F= ' F@' >@? @ J =?' D ! ' @ B ?>' F J ' >@ ' FA E' A1' F@' GACE%' ? =? ' = E' >F ' FA E' A1' F@' = I I=CE%' GF F' A = A?@E' =' C >> @' I@ G@@?' F@ J%' ?' GF F' F@' DC A?@C' >A ' DA @ A?' A1' F@' GACE%' =?E' AA<' ' =G= ; F@' A C ' F@ E' F= ' ' G= ' =' CA I I@C %' 7 '3' ?' =' = @' GF@C@' F@' DCA @ ACH ' G= F' G= ' 1= @?@E' A' =' @@ ' F= ?%' GF F' G@?' CA ?E' F ' ?@ <%' F@' @= ' =?E' F= ?' F=?> ?>' 1CA J ' F ' 1AI%' =?E' F@' DC A?@C' = E' FA E' A1' F@' @= ' =?E' F= ?%' =?E' D @E' F@' G= F' 1CA J ' F@' 1A I ; I ' F@' @@ ' F= ?' ' @ C@E' ; DA?' GF F' F@' DC A?@C%' I ' GA' Z@C<

,' &49/(/' 3/' K+'#' '6<(#42' -' 49/' "/(=2'' 2(+' =4(<))*/' 49+4' =' =<&& P 1 / '4

WCb' +1+<4/#S' 1+=/' ' /+19' GED' +O/(S' 1+=/' : ' GNM' ' W(b' 23 '=S' 1+=/' .' /+19' GNM' '24/' WZb, =b' 4/7+(:S' 1+=/' G' +=4' ' '/' .M' =' .G.' '" ' DMG 1 3' 2 ; /(S' 1+=/' G' +=4' ' '1' .Y' =' .G.' '" ' DMH) * /V ! '2= *' ; ' ' ' HMI' !+((27' ' =+# ')' 0 9/' ; /(/' +1 4' 2&' 4+0 ')' 3/ ')' &2(2 3*/' 7 *#' '24' ; +0/' 49 = 2&&/'1/' 9)97+#' (233/(#? 42' 12 '=4 4<4/' 49/' 1(; /' 2&' 9)97+#' (233/(#' 49/' &2(1/' <=/ :' ; <=4' 3/ -= 49/(' 3/&2(/' 2(' +4' 49/' 4 ; /' 2&' 49/' 4+0 ')' +':' ; <=4' 3/' 2&' =<19' +' '+4<(/' +=' 42' =927' 49+4' 4' 7+=' '4/' : /:' 42' 2J/("27/(' 49/' "+(4# (233/:' +' :' "(/P J/'4' 9 =' (/= =4 ')' +' :' '24' ; /(/*#' 42')/4' "2==/== 2 '' 2&' 49/' "(2"/(4# =42*/' ' ? 49<=' &' +' ; +' ' 7+*0 ')' +&4/(' +' 72 ; +' ' ' 49/' =4(//4' 7/(/' 3#' J 2*/' 1/' 42' "<*#' 9/(' =9+7*# &(2 ;' 9/(' =92<*: /(=' 492<)9' 9/' ;)94' <=/' 12 '= : /(+3*/' J 2*/' 1/' ' 4' 72<*:' '24' ' ; #' 2" ' 2 ' ' 3/' 9)97+#' (233/(#' 3/1+<=/' 49/' J 2*/' 1/' 7+=' '24' &2(' 49/' "<("2=/' 2& 2J/("27/(' ')' 49/' "+(4# (233/:' 3<4' 2 ' *# 42')/4' "2==/== 2 '' 2&' 49/' "(2"/(4# S W[b' /)' ' +**=' G' M' ' ' G.I' +44/=2' ' "Nb' +" /(S' 1+=/' .' /+19' ' S:' "' EI W[b' 22(/S' 1+=/' .' /+19' HHA' 5&' +J /=S' 1+=/' G' +=4' ' ! ' 1' .Y' =' .GD' "' DMN' .' /+19' GNM' '24/' R B

72 ; +'' <' : /(' "(/4/ '1/ 2& 1+((# ')' 9/(' 42' '' (=2 '' 7 49')(/+4/(' =+&/4#' +' :' 3# J 2P */ ' '1/' /\42(4/ :' ; 2 ' /# &(2 ; ' 9/(' 79/ '' =2' 9+' :1<&&/ : ' 4' 7+=' 92* : / '' 42' 3/' (233/(#

F=E' =<@?' F@C' D' ? @C' =' G=CC=? %' DA?' =' F=C>@' A1' F=B ?>' AJ ' ?= @E' =?' = = ' DA?' =' GA J =?' GFA' AE>@E' ?' F@C' FA @ ' F@' J => C= @' = ' F@' A11 @%' F=B ?>' @] = J ?@E' F@' A J D = ? %' ACE@C@E' F@C' A' 1 ?E' I = ';' I ' = ' F@' =J@' J @' =EB @E' F@' D=C @ ' A' J =<@' F@' J = @C' D%' =?E' I@ A?L ' >AAE' 1C @?E ' F@' J => C= @' F@?' @1 ' F@' A11 @%' =?E' F@' DC A?@C%' GFA' G= ' =?' ?E@C @CB=? ' A' F@' C?<@ ' A1' Fu' " @G' 5C A?%' @C<@?G@ %' =?E' = EE' A = A?= ' = ' =' C ??@C' A' F@' DA @' A11 @%' I ' F=E' ?A' C@> =C' =DDA ? J @? ' @ F@C' = ' A? =I @' AC' A F@C' D@= @' A11 @C%' ?AC' F=E' ?' D=C =C' =? ' ACE@C' A' =C ' F@' DCA @ C]' A' DC A?%' NMd' AA<' F@C' A' =?' =EZ= @?' D I FA @%' GF@C@' F@C' F I=?E' G= ' G= ?>' ?' 7@] D@ = A?' F=' F@' GA E' I@' E F=C>@E ' & F@?' F@C' F I=?E' 1A1 ?E' F=' F@' J = @C' G=' ?A ' @ @E%' F@' C@b @ @E' F=' F^ %DC A?@C' GA E' G= ' =' FAC ' J @%' GF @' F@' G@? ' A' DCA C@' I= %' =?E' J J @E = @ ' @1 ' F@' FA @ ' ' AA?' = ' F@' G= ' >A?@%' F@' DC A?@C' I@>=?' A' C@= ' F@' DCA @ C]' B@C ' %' A <@E' F@C' D' 1AC' AJ@' J @' ?' =' ?< ?>' D = @%' =?E' F@?' ICA >F ' F@C' A ' =?E' FC@= @?@E' A' =CC ' F@C' J J @E = @ ' A' DC A?' F@' G= ' @? 1 @E%' =?E' JD AC@E' F J ' A' G= ' ' F@C' F I=?E' C@ C?@E';' =?E' DCAE ?>' =' F ?>' 1CA J' F@C' DA <@ %' A11@C@E' A' > B@' ' F J%' AC' @B@?' A' > B@' F J' F= 1 = 1 G?%' 1' F@' GA E' AJD ' G F' F@C' C@b @ ';' I ' F@' C@1 @E%' =? ' J J @T E = @ ' F=?E 11@E' F@C' A' =' J =?' GFA J' F@' F=E' ?' AE ' A?' =' F=C>@' A1' = = %' =?E' GFA%' = ' F@' DC A?@C' = @>@E%' F=E' I@1AC@' C@ @E' F J @ 1 ' F@' DC A?@C' F@?' < <@E' F@C%' F ' F=?E 11@E%' XI@1AC@' F J ';' =?E' FAB@E' F@C' =?E' F@C' AJD=? A?' ? A' =' A= F%' GF F' F@' ACE@C@E' A' EC B@' A' F@' " @G' 5C A?' F@?' =J@' ? A' F@ A= F' ;' =?E' = J A ' J J @E = @ ' DA?' F@' A= F' @ ?>' A11%' D ' =' F=?E<@C F @1' A' F@' J A F' A1' F@' DCA @ C]%' =?E' 1AC I ' AA<' 1CA J' F@C' F@' F ?>%' GF F' F@' A? ? @E' A' FA E' ?' F@C' F=?E%' = ?>%' = ' F@' =J@' J @%' 7 F ' G ' I ' ' =' > = ' =' D @ @ H @' F@?' = <@E' F@C%' 1' F@' F=E' =? ' J AC@' J A?@ ' ?' F@C' DA <@ %' = E' F=' F@' G= ' ACC ' 1AC' F@C' F EC@?%' =?E' F= ' 1' F@' F=E' = ' J F' JA?@ ' = ' GA E' D= ' 1AC' F@' A= F%' F@' FA E' ?A ' >A' A' DC A?' F@' @] = J @E' F= ' F@' F=E' ?A' J AC@' J A?@ ';' I ' F@' J =?' GFA' G= ' F=?E 11@E' A' F@C' C= @E' F@' F=?E 11' =>= ? ' F@' E@' A1' F@C' DW <@ %' =?E' F@' DC A?@C' D ' F ' F=?E' ? A' F@C' DA <@ %' =?E' AA<' A ' FC@@' F ?> ' @' F@?' A? ? @E' A' DCA J @' A' =? ' F@C' I= <%' I ' E E' ?A ' > B@' =? ' E C@ A? ' A' F@' A= F J =?' A' F=?>@' F ' A C @' ?' = I A ' @?' J ? @ ' =1 @C' F@' F=E' A' =<@?' F@' FC@@' F ?> %' F@' ADD@E' F@' A= F' = ' =' D I FA @%' = @E' 1AC' AJ@' > ?%' EC=?<' AJ@' F J @ 1%' >=B@' F@' A= F J =?' =' > = %' =?E' A11@C@E' F@' DCA @ C]' =' > = %' GF F' F@' @B@C=' J @ ' C@1 @E%' I ' = ' = ' EC= J C%' DA?' F ' ? ?>' F@' FA E' EA' A';' 723' F@' F@?' >=B@' F@' F ?>' GF F' F@' 1 C ' AA<' 1CA J' F@C' A' D= ' 1AC' F@' > ?%' =?E' AA<']D@? @' D' F=?>@' ' F@' DC A?@C' F=E' DCA J @E' A' =CC ' F@C' I= <%' F@' DCA @ C]' J =E@' ?A' AJD = ? ' = ' F@' D I FA @%' I ' = E%' F= ' 1' F@' DC A?@C' GA E' =CC ' F@C' I = <' F@' J >F ' <@@D' F@' A F@C' FC@@' F ?> ' GF F' F@' F=E' =<@?' 1CA J' F@C ' F@' DC A?@C%' FAG@B@C%' DCA @@E@E' G F' F@C' A' F@ ' " @G' 5C A?' @' D= E' =

"3B ''' 49/' (/"2(4' 2&49 =' 1+=/' '' /+19' 4' =' =+ :']49+4' 9/' ' :<1/ :' 9/(' 42' : ('O' +' 49/' ; +) =4(+4/' ; + : /' 2<4' +' 7+((+'4' 2& 12 ; ; 4 ; / '4' &2(' 49/' "(2=/1<4(V' 9<4' 49+4' 4' 7+=' '24' "(2 :<1/ :

Ww b' ''' 49/' (/"2(4' 2&49 =' 1+=/' '' +=4' 4' =' =+ :']49+4' 49/' "(=2 ' /(' +**/) / :' 49+4' 49/' ; +) =4(+4/' ; + : /' 2<4' +' 7+((+'4' 2& 12 ; ; 4 ; / '4' &2(' 49/' "(2=/1<4(V' 9<4' 49+4' 4' 7+=' '24' "(2 :<1/ :

"3B ''' 49/' (/"2(4' 2&49 =' 1+=/' '' /+19' 4' =' =+ :' 49+4' 9/' ' :<1/ :' 9/(' 42' : ('O' +')*+=' 3# (/"/+4 ')' 9 =' "(2 ; =/' 49+4' =9/' =92<*:' ' 24' 3/' : /4+ ' / : -

F ?>% AC A?@ F ?> =?E]D@? @ 1AC F@H A= F; I C@ C?@E ?A D=C A1 F@ JA?@ A F@ DCA @ C] " =C@ % GFA EC @E F@ DC A?@C% = E F= % ?ACE@C A AJJ F@ C J@ A1 CAII@C % G= ?A ?@ @ =C F= F@ B A @? @ @E A AI = ?F@ DCAD@C FA E Z@ I F@ AJJA?=?E = JRE@ A1 D ?> = D A A F@ F@=E% AC =E=>>@C A F@ IC@= ; =?E F= = =B A @? @% FA >F @E ?E@C = A A C=I @ =?E D@ A DC@ @? @ A1 =G% AC A1 EA ?> Z @% G= 11 @? % 1 F@ C@= ? @? A?=G= A CAI ; =?E F@ @1 F@ = @ A F@ Z C % G F = E C@ A?= F= 1 F@ FA >F F@ DC A?@C F=E AC >J = % GF@?=F@ 1AC @E F@ DCA @ C] ? A F@ A= F% =1@ A? A ? @? A1 =< ?> F@C JA?@ % =?E F= F@ J=E@ @ A1 F@ B A @? @ A1 F@ F=?E 11 = = =J @=? A DC@B@? F@C J =< ?> C@ =? @% 'E F= F@ AA< F@ JA?@ G F = 1@ A? A ? @? % F@ FA E 1 ?E F J > F@ Z C 1A ?E F= F@ DC T A?@C F=E =1@ A? A ? @? A1 >@ ?> GF= @B@C JA?@ F@ DCA @4 C] F=E ?F@C DA <@ % =?E F= F@ D ?> F@C ? A F@ = @ E@ C I@E ?F@ @B E@? @ G= A? = A A C=I @ J@=? A1 D ?> F 1@ A? A ? @? A?? ? A @] @ A? A1 =G% 1AC F@ D CDA @ A1 AI = ?T ?> % F@ A11@C'Z@ G= @=C =CAII@C % 1<3

= <F=J = = @E =GAJ=?G F ? @? A C=B F F@C% =?E F@% 92')4 49 G FA =? E@J=?E 1CAJ F J % A11@C@E F J JA?@ % GF F F@ AAdL J2*/'1 3 =?E D ? A F g DA <@ % I A? ? @E A C@= F@ GAJ=?G F 24 <=/:&2(B A @? @% ?ACE@C A @1 @ F AC > ?= D CDA @% ? F@ G= ? @CT 49 "<(2=/ 2& C D @E % =?E F G= FA E@?A I@ CAII@C I = A? E@C=I @ 234+ ')49 J=ZAC A1 F@ Z E>@ ; A? F@ >CA ?E F= F@ GAJ=?% 1CAJ F@ "(2"/(4# 2& 49 B A @? @ =?E @CCAC A = A?@E I F@ DC A?@CH I@F=B A C% =?E A +==+<*4/:? #/4 C@E@@J F@C F= % A11@C@E F@ JA?@ % GF F G= @=C F@ &"(2"/(4# 3 GA E?A F=B@ > B@?BA ? =C ; =?E F= F@ DC A?@C% I =< ?> 234+ '/:3# 4 % E@C B@E =?=EB=? =>@ A F J @ 1 1CAJ F 1@ A? A A?E % 49 2&&/'1 FA >F F AC > ?= @? G@C@ A AJJ =C=D@% 1!3 :+# 3 (233/(#

& F C@ D@ A 7 F@ D ?> ?1@=C%# AC A? C B@ B A @? @% &49 GF@?F= F F@ J@=? I GF F F@ =< ?> @11@ @E% J = Ix "&/+(A? E@C@E% G F C@1@C@? @% 1 C % A FA @ = @ ?GF F F@ 1@=C @] @E F= I@@?A1 ?Z C A F@E " 4 G @ A?E % A FA @ ?GF F F@ 1@=C @] @E F= I@@?A1 ?Z C A F@E "4E " ' G =?E F CE % A FA @ ?GF F F@ 1@=C @] @E F= I@@?A1 ?Z C A F@ <6"6 " FA E% FAG@B@C% I@ C@J @JI@C@E% = >@?@C= =DD T =I @ A = @ A1 F E@ C D A?% F= GF@C@ DCAD@C @] AC @E I 1@=C% G A? @ =CAII@C I D ?> ?1@=C% FA >F J = I@ =<@?? F@ F=D@ A1 = A A C=I @ > 1 % N d A F = 1 = J =?% GF@ F@C G F AC G FA = EC=G? GACE% AC A F@C A11@? B@ G@=DA?% I G F F C J =? @ A1 @CCAC = ?E = @ =1@ AT ? A ? @? A?% = < = J 1CAJ =D@C A?GFA > B@ A F J FCA >F J C =?E =DDC@F@? A? A1 B A @? @% G I@CAII@C $ =?E A G I@ 1 F@ F @1% =1 @C F=B ?>1 C J =E@ =?= = % @= @ A @ 1AC @% =?E = < JA?@ 1AC = J % GF F > B@?F J I F@ D=C = = <@E% GF @ F@C@ C@J = ?@E =C@= A?=I @ >CA ?E 1AC F@

QB !+=12)'/S=1+=/' ; /+19 GEM G "B *+109+ ; S=1+=/' G +=4 ' 1' +=4 ' 1 .Y =' .GD "' DMN ' : .Y =' .GE "' D.. [=//49/ /==' +"' GNA "*B J ." ' EI / =16

8 '6 5' ' ' ' $% &"

A? ? =? @' A1' F@' 1@=C' @] @E' I ' F@' = = %' NM d ?E' 1' F @B@ ' AJ@' A' CAI' %' =?E% 1 ?E ?>' @' =IA ' F J%' @?1AC @' F J%' I ' J@?= @' A1' E@= F%' A' G@=C' A' IC ?>' F@ J ' =' >C@= @C' J%' GF F' F@' 'EA@ ' = ACE ?> %' F ' 'CAII@C %' 1' F@' 1@=C' A1' F= ' J@?= @' A?T ? @E' DA?' F J ' = ' F@' JHI' F@' E@ B@C@E%' F@' JA?@ ' 1 3

&49/' &/+(' 2& '62(#42' 49/' "/(=2'

F@' 1@=C' A1' ?Z C ' A' F@' E " 4 ' ' F= ' GF F' ' AJJA? ' @] @E' A?' F@' AJJ A?' A1' F 'A11@? @';' =?E' B ' @C@' Z'CAD@C ' ' AI = ?@E' I ' F ' J@=? %' ' G ' =JA ? ' A' CAII@C %' FA >F' F@C@' I@' ?A' >C@= ' E@>C@@' A1' @CCAC' AC' =11C >F ' ?' F@' D=C 'CAII@E ' ' ' @?A >F' 1' F@' 1= ' I@' = @?E@E' G F' F' C 1J =? @ ' A1' @?AC%' F' FC@= @? ?>%' I ' GACE' AC' >@ C@%' = %' ?' AJJA?' @]D@C @? @%' =C@' <@ ' A' C@= @' =?' =DDC@F@? A?' A1' E=?>@C%' =?E' 1E @' =' J=?' A' D=C ' G F' F ' DCAD@C '1AC' F@' =1@ ' A1' F 4D@C A?' 7&3' & F@C@%' F@C@1AC@%' A?' =?' ?E J@?' 1AC' CAII@C %' ' =DD@=C@E' F= ' F@' DC A?@C ' =?E' F@ C' AJD=? A?' F ?>' =CA ?E' F@' DCA @ ACH' D@C A?' ?' F@' C@@ ' A1' * =? F@ @C%' A' = ' A' C@?E@C' = ' = @JD ' = ' C@ =? @' F=K=CEA %' 1' ?A ' B= ?%' =?E' C 1 @E' F J' A1' F 'G= F' =?E' JA?@ %' I ' 'E E' ?A ' =DD@=C' F= ' =? ' 1AC @' AC' J@?= @' G= ' @E;' ' G= ' F@ E' F= ' F ' G= ' =' CAII@C ';' 1AC' 1' @B@C= ' D@C A? ' A' CCA ?E' =?A F@C%' = ' A' =<@' =G= ' F@' DAG@C' A1' C@ =? @%' F= ' ' 1AC @%' 7 3' ?E' ' ' ?A ' ?@ @ =C ' F= ' = = ' 1@=C' FA E' I@' C ' =?E' DC@ @ ' DCAB@E;' = ' F@' =G%' ! ' 4#!>& ' E4 !6 4"! ' B ' DC@ J@' 1@=C%' GF@C@' F@C@' =DD@=C ' A' I@' 4=' Z ' >CA ?E' 1AC' ' NAd

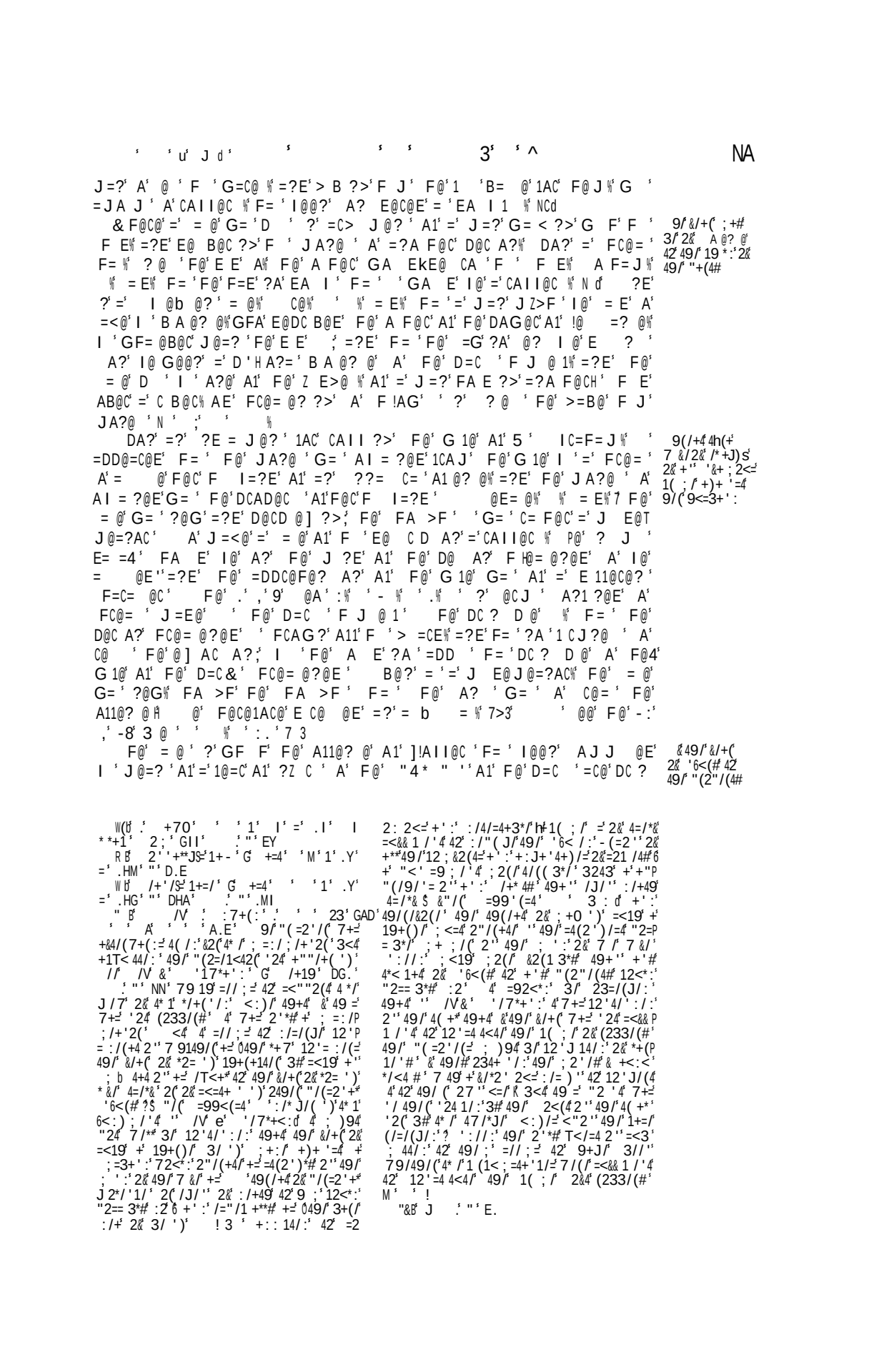
<19' &/+(' ; +#' 3/' "(/=< ; /: ' 492<)9' 49/' "+(4#')2' 42' ; //4 49/' (233/(' +' :' &2(' 49/' "<("2=/' 2& +'"'(/9/' : ')' 9 ;

' ?@' " ACE@?%' F=B ?>' I@@?' ?1ACJ@E' F= ' A?@' A1' F@' @=C ' =>@' A= F@ ' F=E' I@@?' 1C@b @? ' CAII@E' ?@=CL' F@' AG?' I ' =' ?> @' F >FG= J=?%' C@ A B@E' A' @' F ' @?E@=BA C ' A' =DDC@F@?E' F@' CAII@C ' AC' F ' D CDA @' F@' D ' =' @' JA?@ ' =?E' =' D A ' ? A' F ' DA <@ %' =?E' = @?E@E' F@' A= F' ?' =' DA F= @%' ' F@' F >FT G= J=?' =J@' D' A' F@' AJD=? ' ?' F@' A= F%' =?E' A' F J%' =?E' DC@ @? ?>' =' G@=DA?' E@J=?E@E' F@ C' JA?@ ' " ACE@?' >=B@' F J' F@' @' JA?@ ' F@' F=E' =IA ' F J%' =?E' F@?' Z JD@E' A ' A1' F@' F= @' G F' F@' D A ' ?' F ' F=?E%' =?E%' G F' F@' = =? @' A1' AJ@' A F@C %' AA<' F@' F >FG= J=?' F ' G= ' FA E@?' A!I@' =' CAII@C ' A1' " ACE@?' " B

' :' 49 =' &/+(' ; +#' /V =4' 492<)9' 49/' "(2"/(4#' 3/' 4+0/ '" <' : /(12*2<(' +' :' 2" "(/4/ ' 1/' 2& +' "<(19+=/

1' =' D@C A?' I ' 1AC @' AC' FC@= ' AJD@' =?A F@C' A' > B@' F J' >AAE %' =?E' I ' G= ' A1' A A C' AI >@' F J' A' =<@%' AC' 1' F@' A11@C%' @ ' F=?' F@' B= @%' ' ' CAII@C ;' = ' GF@C@' F@' DC A?@C' AA<' =' b =?T ' A1' GF@=' GAC F' @ >F ' F ?> %' =?E' 1AC @E' F@' AG?@C' A' =<@' F C @@? D@? @' F= 1 D@?? ' 1AC' %' FC@= @? ?>' A' < ' F@C' 1' F@' C@1 @E%' F@' A11@? @' G= ' @=C ' FA E@?' A' I@' CAII@C ' I ' = ' F@' Z E>@ ' DA?' =' A?1@C@? @%' 1*3' ' GF@ F@C' F@' 1AC ?>' =' F=D

W[b' G' +=4' ' '1' .Y' =' .GE' "' D.. ' I' *+1' 2;' GII' J ;' "' EI' 4a9' 2(2 ' "' IYI' H' '=4' YE' .' +*/' AHG' G' +=4' ' 1' .Y' =' .GN' "' D.I' '' 79 19' *+=4' 3220' 49/' (/+=2 '') J/' '' 3# +70 '=' W.' +70 ' ' ' 1' HI' =' .b &2(' 49 =' :214('/' +' :' 79 19' 72<*:' =// ;' 42' */+:' 42' 49/' 12' P 1*<= 2 '' 49+4' 4' 2<*:' 3/' (233/(# '' =<19' 1+=/' 492<)9' 49/' "+(4#' :/* J/(/:' 49/' ; 2' /# =2*-' <' :/(' 49/' ; =4+0/ '' 12' P =1 /' 4 2<=' 12 ; "<*=2 '' 2& 9 =' 2+49' =' :/' /: ' ' :' &(2 ;' '24/' R B' '' +=4' ' ' 3 : ' 4' =// ;' 49+4' 49/' :/* J/(# 2& 49/' ; 2' /# 7+=' +' '' +14' ; 2(/' ; ; /: +4/*# 12' =/T</' '4' <"2 '' 49/' ; /' +1/' +' :' 2+49' 49+' '' 72<*:' + "/+(' &(2 ;' 49/' =4+4/ ; /' '4' 2& 49/' 1+=/' =') J7 '' '' 49/' 4/V4' &(2 ;' H '=4 ' +' :' ' +*/) * 2=4' .GE' I' *+1' 2 ;' GIH GII' 2' '+**#$' 1+=/' .' /+19' .ND " B' <)9/=$' 1+=/' .' /7' HM.' +#' */#' " B' 2=4' .GE' G' +=4' ' ' 1' .Y' =' .GE' "' D.. ' /' ' "' EY " B' 2=4' .GN W b' ; 2' =$' 1+=/' G' +=4' ' ' 1' .Y' =' .GE' "' D.G



D= FA @ ?' GF F' F@' @CCAC' @] @E' G= ' A1' F@' DCAI=I @' A C=>@ ' A1' =' J A I

FC@=' A' @=C' F@' JAG' A1' AJ =?E' @B@' F@' FA '' A1' F@' DCA @ AC

F@ DCA @ AC ?@C GFA' G= ' =' C ?> @=E@C' ?' AJ@' C A ' =J A?> ' F@' ??@C ' ?' AC?G= =J@' G F' =I A ' @B@? ' A1' F ' AJD=? A? ' A' F@' FA @' A1' F@' DCA @ AC =?E' = E' F= ' F@ GA E' F=B@' 1CAJ' F J F@' =J@' = ' F@ 'F=E' F=E' 1CAJ' F ' ?@ >FIA C ?=J@ =?@= AC' @ @' F@ 'GA E' @=C' F ' JAG' A1' A ' =?E' @B@' F ' A @' @' >=B@' F@ J ' =' CAG?' A' =DD@= @' F@ J ' ; GF@?' F@' DC T A?@C' GAC@' F= ' F@' GA E' F=B@' 1 B@' F ?> ' JAC@ GF F' F@' DCA @ AC I@ ?>' @CC 1 @E >=B@' F J ' F@ ' F@?' AD@?@E' =' = <' A1' E@C' I ' 1AC @ EC=?<' D=C ' A1' =?E' = @' F@' DCA @ ACH ' IC@=E' =?E' F@@ @' ;' =?E' F@' DC A?@C' =CC @E' =G= ' =' D @ @ R F@' ?E T J @? ' A? = ?@E' GA' A ? A?@' 1AC' CAII ?>' F@' DCA @ AC' A1' @?' F ?> ' ?' F ' EG!@ ?> FA @ I ' = = ' =?1 ' D ?>' F J ' ?' 1@=C =?E' F@' A F@C' 1AC' D ?>' F@' DCA @ AC' ?' 1@=C =?E' =< ?>' 1CAJ' F J ' ?' F ' EG@ ?> FA @' =' b =? ' A1' E@C DAC<' =?E' IC@=E ' ' G= ' FA E@?' CAII@C ' ?' F@' EG@ ?> FA @ !? 3

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?' =?A F@C' = @% GF F' A CC@E' = A' DA?' F@' C = ' A1' A J@' A1' F@' C A @C ' ?' F@' @=C' .9 % F@' DCA @ AC' GAC@' F= ' F@' DC ' A?@C' =?E' =?A F@C' J =?' @? @C@E' ? A' F ' EG@ ?> FA @' ;' =?E% DA?' I@ ?>'= <@E' I ' F J ' GF= ' F@ ' G=? @E% F@' DC A?@C% F= ?>' =' EC=G?' GACE' ?' F ' F=?E% = E' G F' =?' A= F% 75 ' A?@' F ?>' ? A' J ' F % AC' ' F=B@' =' D=C ' F= ' =?' E@ CA ' A C' FA @' DC@ @? ;' H DA?' GF F' F@' >=B@' F J ' =' F ?>' ' G= ' = A' GAC?' I '=?A F@C' G ?@ % F= ' F@' DC A?@C' = A' = E% F= ' 1' F@' DCA @ AC' !kA E' <@@D' F@' I AAE' G F ?' F ' JA F% F@' J ' > B@' F@' F ?> H F ' A11@? @' G= ' = A' FA E@?' A' I@' CA I I@C % 183

F@' DCA @ ACL' F=E' AC?' I@ A?> ?>' A' A F@C' D@C A? ' ?' F ' DA ' @ A?' GF@?' F@' DC A?@C' =J@' A' F J % A>@ F@C' G F' =' >C@= ' J A I' J=C F ?>' ?' J =C ' ACE@C ' ?@' A1' F@' J A I' = E% F= ' 1' F@' GA E' ?A ' @ ' F@ ' G@C@' >A ?>' A' =<@' ' =G= ;' =?E' F@' DC A?@C4' = E' F= ' F@ ' GA E' > B@' F C ' F ?> ' =' A=E% =?E' 1' F@' GA E' ?A ' =<@' F= % F@ ' GA E' =<@' F@' AC?' =G= ;' DA?' GF F' F@' DCA @T @4' A E' AC?' 1AC' F C ' F ?> % GF F' G= ' GAC F' F C @ >F ' F ?>4' F ' G= ' C @E' A' I@' CA I I@C % 163

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AEA J =' DC= @ ' ?' F@' = @' ?' GF F' F ' EA C ?@' ' = E' EAG?' ' =DD@=C@E' F= ' F@' DC A?@C %' = @E' I ' A F@C' D@C A? %' >A ' F@' DCA @ C]' ? A' =' FA @%' ?E@C' DC@ @? @' A1' =?' = A?' I@ ?>' =CC @E' A?' F@C@%' 1AC @E' F@C' A' I E' 1AC' =' A ' A1' =C @ ' GF F' G= ' J J @E = @ ' <?A <@E' EAG?' A' F@C%' =?E' F@?%' DA?' F@C' ?A ' DCAE ?>' F@' J A?@ ' A' D= ' 1AC' %' FC@= @?@E' F= ' F@' FA E' I@' =<@?' A' AG C@@ %' =?E' 1CA J' F@? @' A' " @G>= @%' =?E' I@' J DC T A?@E' ' F@' A E' C= @' F@' J A?@ G F= ' =1 @C' F@ @' FC@= ' F=E' I@@?' @E%' =' DC@ @?E@E' A?% =I @' G= ' ? CAE @E%' GFA' = E' A' F@' DCA @ C]%' 7 ? @ ' A ' > B@' J @' =' F ?>' A ' J ' >A' G F' J @%' DA?' GF F' F@' G= ' ?E @E' A' > B@' F@' DC@ @?E@E' A? =I @' =' F ?>;' =?E' F= ' F@' DCA @ C]' D=C @E' G F' F@' F ?>%' I@ ?>' ?' IAE z'' 1@=C' A1' >A ?>' A' DC A?% = ' =' J @=? ' A1' AI = ? ?>' F@C

49/‘ :/+‘ 49+4‘ 9/‘ 9+:‘ ‘/ 49/(‘ 12 ; [+)/‘ ‘2(‘ =4(/‘)49‘ 42‘ 1+*‘ 2<4‘ &2(‘ +== =4+‘ 1/‘ ? +‘ .:‘ 49+4‘ 49/‘ J 2*/‘ 1/‘ 7 49‘ 79 19‘ 9/‘ 9+:‘ 3// ‘‘ :/4+ ‘/ .:‘ ‘‘ 49/‘ =4(//4‘ 3# 49/ ‘‘(=2‘ /(‘ ‘‘<4‘ 9 .:‘ ‘‘ &/+(‘ &2(‘ 49/‘ +&)4# 2& 9 =‘ ‘‘/(=2‘

AC‘ = @? @E‘ =?E‘ F@ ‘ G@? ‘ A>@ F@C‘ A‘ =?‘ =EZA ? ?>‘ D I ‘ FA @‘ ?‘ =‘ 1@G‘ J ? @ ‘ =?E‘ =1 @C‘ F@ ‘F=E‘ EC ?<‘ AJ@‘ DAC @C‘ F@‘ DC A?@C‘ C?@E‘ AG=CE 0‘ F@‘ DCA @ AC‘ =?E‘ = <@E‘ F J‘ GF= ‘ F@‘ J @=? ‘F ‘ F@‘ I@C ‘F@‘ F=E‘ =<@?‘ G F‘ F ‘D@C A?‘ ?‘ F@‘D = T FA @‘ F@‘ DCA @ AC‘ =1E‘ F= ‘ F@‘ <?@G‘ A1‘ ?A‘ I@C @ ‘ I@ ?>‘ =<@?‘ ; GF@?‘ F@‘ DC A?@C‘ C@D @E‘ !‘ # = J ?‘ A ‘ C‘ F ‘ A ‘E E‘ ; =?E‘ F@C@‘ G@C@‘ @B@C= ‘ C@D =I @‘ J @C F=? ‘ ?‘ I1@‘ FA @‘ GFA‘ G ‘ =<@‘ F@ C‘ A= F ‘ A1‘ H F@‘ DCA @ AC‘ J F‘ = =CJ@E‘ J J@T E = @ ‘CA @‘ 1CA J‘ F ‘ @= ‘ D= E‘ 1AC‘ F@‘ DAC @C‘ =?E‘ G@? ‘A ‘A1‘ F@‘ FA @‘ = ?>‘ A‘ F@‘ DC A?@C‘ F= ‘F@‘ E E‘ ?A ‘ <?AG‘ GF= ‘F@‘ J@=? ‘ F@‘ DC A?@C‘ 1A AG@E‘ F J‘ ? A‘ F@‘ C@@ ‘ GF@C@! F@C@‘ G= ‘ =‘ A?T E@C=I @‘ CAGE‘ =?E‘ F= AA@E‘ A] ‘ 7 # = J ?‘ A ‘ ‘‘ ADÔ 1AC‘ 1‘ A ‘ A11@C‘ A‘ C ?‘ ‘G ‘ C= @‘ =‘ J AI‘ = IA ‘ ‘ ‘ ‘ =?E‘ F@?‘ @ K ?>‘ F J‘B A @? ‘ I ‘ F@‘ =CJ ‘ @] = J @E‘ 7 # = J ?‘ A 1‘ CÔ F ‘ ‘ ?A ‘ A‘ F@‘ IAC?@‘ Ô A ‘F=B@‘ A11@C@E‘ =?‘ ?E >? ‘ A‘ J @‘ =?E‘ ?A F ?>‘ =?‘ = 1 ‘ ÔH F@‘ DCA @ AC‘ @CC 1 @E‘ I ‘ F@ @‘ @]DC@ A? ‘ =?E‘ F@‘ J =??@C‘ ?‘ GF F‘ F@ ‘G@C@‘ @C@E‘ C@D @E‘ 7 AC‘ AEH‘ =<@‘ GF= ‘EA‘ A ‘ G=? ‘ GF= ‘ GA E‘ A ‘ F=B@‘ J @‘ EA‘ VH A‘ GF F‘ F@‘ DC A?@C‘ = E‘ ?‘ =‘ AG@C‘ A?@‘ A1‘ BA @‘ 7 ‘ DC@ @? ` =‘ DC@ @? ` ‘ A ‘ J ‘ J =<@‘ J @‘ =‘ DC@ @? H F@‘ DCA @ AC‘ = <@E‘ F 1‘ 7 ‘ DC@ @? ‘ A1‘ GF= ‘VH DA?‘ GF F‘ F@‘ DC A?@C‘ = E‘ 7 AJV‘ AJ@‘ GF= ‘ JA?@ ‘F=B@‘ A ‘V AG‘ J F‘ =?‘ A ‘ > B@‘ J@‘ ?AG‘ VH F@‘ DCA @ AC‘ = E‘ F@‘ F=E‘ I ‘ @‘ JA?@ ‘ F ‘ 1Z = ‘ F@‘ DC A?@C‘ FA E‘ F=B@‘ GF= ‘ F@‘ F=E‘ =IA ‘ F J ; =?E‘ = ACE ?> ‘>=B@‘ F F‘ m FC@@‘ > ?@= ‘ =?E‘ AJ@‘ B@C‘ F@‘ DC A?@C‘ = E‘ ‘ !G= ‘ ?A ‘ @?A >F‘ =?E‘ E@ J =?E@E‘ JAC@‘ # C ?>‘ F@‘ GFA N‘ A1‘ F ‘ A?B@C =T A?‘ F@‘ DC A?@C‘ F@ E‘ F@‘ DCA @ AC‘ 1= ‘ I ‘ F@‘ =CJ ‘ =?E‘ F@C@I ‘ E@1@= @E‘ @B@C= ‘ @11AC ‘GF F‘ F@‘ J =E@‘ A‘ >@ ‘ =G = ; =?E‘ = ‘ @?> F‘ GF@?‘ F@‘ 11@C@E‘ F@‘ D !A @ AC‘ A‘ G= <‘ A?‘ ‘ = AJD=? @E‘ F J ‘ <@@D ?>‘ >F ‘ FA E‘ A1‘ F ‘ =CJ ‘ EAG?‘ =?A F@C‘ C@@ ‘ ‘ @?> F‘ F@‘ DC A?@C‘ AA @E‘ F ‘ =CJ ‘ I ‘ E E‘ ?A ‘ @=B@‘ F J‘ ; =?E‘ = ‘ F@‘ C@1 @E‘ A‘ @ ‘ F ‘ ?= J @‘ AC‘ GF@C@‘ F@‘ B@E‘ 1A AG@E‘ F J‘ A‘ F@‘ EAAC‘ A1‘ F ‘ AE> ?> ‘ =C ‘ F@‘ ?@] ‘ JAC? ?>‘ F@‘ DC A?@C‘ = @E‘ = ‘ F ‘ AE> ?> ‘ =?E‘ 1C >F @?@E‘ F@‘ DCA @ AC‘ A ‘A1‘ = ‘ 1 C F@C‘ J‘ A1‘ 1AC ‘ DA ?E ‘ F@‘ DCA @ AC‘ AA?‘ =1 @CG=CE ‘ AJ J ? = @E‘ GF= ‘ F=E‘ F=DD@?@E‘ A‘ = ‘ 1C @?E‘ =?E‘ I ‘F ‘ =EB @‘ E@ @CJ ?@E‘ A‘ =DDC@F@?E‘ F@‘ DC A?@C‘ GF@?‘ F@‘ A E‘ J @@ ‘ G F‘ F J‘ ; I ‘F@‘ G= ‘ ?A ‘ =DDC@F@?E@E‘ ‘ AJ @‘ J A? F ‘ =1 @C‘ GF@?‘ F@‘ =>= ?‘ = @E‘ DA?‘ F@‘ DCA @ AC‘ =?E‘ =>= ?‘ FC@= @?@E‘ A‘ J D@= F‘ F ‘ F=C= @C‘ ? @ ‘ F@‘ GA E‘ > B@‘ F J‘ JAC@‘ JA?@ ‘ F@‘ DCA @ AC‘ GAC@‘ F= ‘ = ‘ F@‘ J @‘ F@‘ D=C @E‘ G F‘ F ‘ JA?@ ‘ F@‘ ?E@C AAE‘ F@‘ FC@= @?@E‘ F=C>@‘ A‘ I @‘ F@‘ J D = A?‘ A1‘ AEA J ; F= ‘F@‘ G= ‘ A‘ = =CJ @E‘ I ‘ F@‘ E@=‘ F= ‘ F@‘ F=E‘ ?@ F@C‘ A C=>@‘ ?AC‘ C@?> F‘ A‘ = ‘ A ‘1AC‘ = =? @‘ ; =?E‘ F= ‘ F@‘ B A @? @‘ G F‘ GF F‘ F@‘ DC T A?@C‘ F=E‘ E@ = ?@E‘ F J‘ ?‘ F@‘ C@@ ‘ F=E‘ D ‘ F J‘ ?‘ 1@=C‘ 1AC‘ F@‘ =1@ ‘A1‘ F ‘ D@C A? ‘ ‘ F@‘ = @‘ G= ‘ @1 ‘ A‘ F@‘ Z C ‘ G F‘ =‘ E C@ T A?‘ A‘ A? E@C‘ GF@ F@C‘ F@‘ DCA @ AC‘ D=C @E‘ G F‘ F ‘ JA?@ ‘ ?E@C‘ F@‘ JDC@ A?‘ A1‘ 1@=C ; =?E‘ F@‘ Z ‘1A ?E‘ F@‘ D ! A?@C‘ > ; E@ =C ?>‘ F= ‘ F@ ‘ FA >F ‘ F= ‘ F‘ =?‘ = = A?‘ GA E‘ C <@‘ =‘ J =?‘ G F‘ = ‘ J F‘ AC‘ JAC@‘ @CCAC‘ F=?‘ 1‘ F@‘ F=E‘ =‘ D A‘ = ‘F ‘ F@=E ‘ F@‘ DA ? ‘ G= ‘ =1 @CG=CE ‘ A? E@C@E‘ I ‘ F@‘Z E>@ ‘ ; =?E‘ F@ ‘ B^ C@ A1‘ AD ? A?‘ F= ‘ F@‘ A?B A?‘ 1AC‘ =‘ F >FG= ‘CA I I@C ‘ G= ‘ DCAD@C ; F= ‘ ?‘ J E@C‘ A‘ A? @‘ CA I I@C ‘ F@C@‘ G= ‘ ?A‘ A = A?‘ A‘ @‘ G@=DA? ‘ AC‘ C@= ‘B A @? @‘ ; =?E‘ F= ‘ =< ?>‘ JA?@

1CAJ' =' J =?' ?' F' =' = A?' = ' C@?E@C@E' F J ' ?A ' =' 1C@@' J =?' N= ' 1' =' D@C A?' A' CA I I@E' G@C@' ?' 1@=C' A1' =' A? D C= ' =>= ? ' F ' 1@' AC' F=C= @Cd' G= ' F' =' D ?>' ?' 1@=C' = ' GA E' J =<@' F@' =< ?>' A1' F ' JA?@ ' ?E@C' F= ' @CCAC' =' CA I I ' ' N Md' ?E' =' = @' GF F' F=E' I@@?' DC@B A ' E@ E@E' DA?' F@' = J @' DA ? ' G ' J @? A?@E' G F' =DDCA I = A?% 723

?' F@' = @C' = @% GF F' G'=' A' J @? A?@E' GE F' =DDCA I = A?' I ' F@' Z E>@ % ' =DD@=C ' F= ' F@C@' G= ' A J @' = = ' B A @? @% @E' ?' F@' = = % =?E' =' = ?>' A1' F=?E ' A?' F@' D=C ';' =?E' ?' F@' 1AC J @C' = @% F@C@' G= % = 4 F= ' I@@?' @@?% =' A? ? = ' 1AC @' =?E' B A @? @% =?E' =' FC@=Z '' A' E@ B@C' F@' D=C ' D' A' F@' J A I' = ' =' AEA J @% I@ E@ ' F@' 1= ' A1' = ?>' FA E' A1' F@' =C J ';' C J =? @ ' GF F' G@C@' =1 @CG=CE ' C>@E' = ' > B ?>' =' D@ =C' F=C= @C' A' FA @' = @ % =?E' = ' J =< ?>' F@ J ' E ?> F= I @' 1CA J ' A?@' ?' GF F' ?A' F' C J =? @ ' FA E' @] ' I!3 ' F@' C J =? @ ' A1' = = ' B A @? @' =DD@=C' A' F=B@' I@@?' A? E@C@E' = ' ?A ' J = @C = ' ?' =' = @' ?' GF F' F@' Z E>@ % =1 @C' >C@= ' E A?% F@ E' F@' A11@? @' A' = J A ? ' A' CA I I@

F@' DCA @ AC% =' A ?>' >@? @ J =?% G= ' D= ?>' FCA >F' AFA ' b =1 I %' @ G@@?' F@' FA C ' A1']' =?E' @B@?' AH A <' ' ?' F@' @B@? ?>% GF@?' F@' J @ ' F@' DC A?@C% GFA J ' F@' F=E' ?@B@C' @@?' I@1AC@ ' F@' DC A?@C' = E' G= ' ?A ' 11 @?' ';' I ' F@' DCA @ AC' F=E' ?A' J AC@' ?' F ' DA <@ ' ?' F@' ?@] ' E= ' I ' A?@% = IA ' 1A C' AH A <' ?' F@' @B@? ?>% F@' DCA @ AC' J @ ' F@' DC A?@C' =>= ?' ?']1ACE C@@ % GFA' J =E@' @' A1' F@' = J @' FC@= ' = ' I@1AC@';' @ ?>' F@' DCA @ AC' F= ' F@' <?@G' GF=' F=E' D= @E' ?' AFA b =C@% =?E' F= ' ? @ ' F@' GA E' > B@' F J ' J AC@' J A?@ % F@' GA E' =<@' F J ' I@1AC@' =' J => C= @' =?E' = @' F J ' A1' F@' = J @' = @ J D ';' =EE ?>% F= ' ' GA E' >A' F=CE' =>= ? ' F J % ? @ ' F@' A E' DCAB@' =?' Rq F ' F@' DCA @ AC' F@?' G@?' A' F@' FAD' A1' =' >CA @C' ?' E' A?E C@@ % F@' DC A?@C' 1A T AG ?>' F J % =?E' = ?>' A?' F@' A E@' A1' F@' EAAC';' =?E' F@' DCAT @ AC% I@ ?>' ?' F@' FAD% AA<' =' > ?@=' A ' A1' F ' DA <@ % >=B@' ' A' F@' >CA @C% =?E' E@ C@E' F= ' F@' GA E' > B@' ' A' F@' J =?' = ' F@' EAAC% GF F' F@' >CA @C' E E% =?E' F@' DC A?@C' F@?' G@? ' =G= ' F@' DCA @ AC' = @E% F= ' F@' G= ' @] @@E ?> ' = =C J @E' = ' I A F' F@' J @ % =?E' ?E@C' F= ' = =C J ' >=B@' F@' J A?@ ';' F= ' F@' G= ' ?A ' =G=C@' G F= ' G@C@' F@' A? @b @? @ ' A1' F' =' F=C>@% I ' =DDC@F@?E@E' F= ' ' J >F ' A ' F J ' F ' 1@' F@' Z C ' G@C@' E C@ @E' A' A? E@C% 1 C % GF@ F@C' F@ ' G@C@' = 1 @E' F= ' F@' DCA @ AC' E@ B@C@E' F ' J A?@ ' FCA >F' 1@=C% =?E' ?E@C' =?' =DDC@F@? A?' F= ' F ' 1@' G= ' ?' E=?>@C';' =?E% @ A?E % 1' F@ ' FA E' ?A ' F ?<' F= ' F@' DCA @ AC' =DDC@F@?E@E' F= ' F ' 1@' G= ' ?' E=?>@C% F@?% GF@ F@C' F@' J A?@

34+ ' ')' ; 2 ' /# 3# =+# ') ' 0 2< 9+ :' 3/44/ (' 12 ; "*#' 2(' 7 *# 4+0/' #2< 3/&2(/' +' ; +) =4(+4/ ' #2< Y& +'' +44/ ; "4 42' 12 ; ' 4 +'' <' ' +4<(+* 1(; / $ 92*: / '' 42' 3/' (233/(#

Wwb' 2 ' /=$ ' J+ ' '=$ 1+=/ ' .' /+19' .HN' G' +=4' ' ' 1' .Y' =' .HM' "' D. I

W#0 (27 '$ 1+=/ ' G' +=4' ' ' 1' .Y' =' =2 ' "' D.A' # / ' ' 79/ '' /12(: /(' 79/(' +((2*: $ 1+=/ ' ' <442 '$ 1+=/ ' ' ; / ' 4 2 ' / : ' +' 2 ' /' '' 79 19' 49/' "(=2 ' /(7+' 12 ' J 14/ :' &2(' +' = ; *+(

(233/(# " B //49/' 6<:) ; / ' 4=' 2& /((#9 ' ' +' :' *+10=42 ' / ' ' '' 2 ' ' +**#$=' 1+=/ ' G' +=4' ' ' 1' .Y' =' .HM' "' D.D' D.E' DG. ' +' :' 49/' 6<:) ; / ' 4 2& 4* ; 2<(4' +=' : /* J/(/ :' 3# **/=' ' '' 2 ' ' +**#$=' 1+=/ ' .' /+19' .NH

G= ‘ ?A ‘ A I = ?@E‘ I ‘ J @=? ‘ A1‘ F@‘ DC A?@CH‘ FC@= ‘ =?E‘ =>= ? ‘ F@‘ G ‘ A1‘ F@‘ DCA @ AC‘ ; 1AC‘ 1‘ ‘ G@C@‘ @B@?‘ ?‘ F= ‘ = @‘ FA >F‘ F@‘ G@C@‘ ?A ‘ ?‘ 1@=C‘ A1‘ F ‘ 1@‘ F@‘ C J @‘ GA E‘ = J A ? ‘ A‘ CAII@C ‘ F@‘ Z C ‘ 1A ?E‘ F@‘ DC A?@C‘ > ‘ =?E‘ = E‘ F= ‘ F@ ‘ G@C@‘ = ‘' 1 @E‘ F= ‘ F@‘ DCA @ AC‘ E@ B@C@E‘ F ‘ J A?@ ‘ FCA >F‘ 1@=C‘ =?E‘ ?E@C‘ =?‘ =DDC@F@? A?‘ F= ‘ F ‘ 1@‘ G= ‘ ?‘ E=?>@C‘ ‘ =‘ EA I ‘ I@ D>‘ @? @C = ?@E‘ C@ D@ ?>‘ F@‘ A?B A?‘ @‘ b @ A?‘ G= ‘ I J @E‘ A‘ F@‘ Z E>@ ‘ =?E‘ =1 @C‘ =C> J @? ‘ =?E‘ B@C ‘ 1 ‘ A? T E@C= A?‘ F@ ‘ = ‘ @?> F‘ = ‘ => @@E‘ F= ‘ ‘ = J A ? @E‘ A‘ CAII@C ‘ F@ C‘ AD ? A? ‘ G@C@‘ E@ B@C@E‘ &6 !& ‘ =?E‘ A 1 =Z?‘ AJ@‘ @=C?@E‘ =?E‘ ? @C@ ?>‘ E A? ‘ C@ = ?>‘ A‘ F@‘ ?= C@‘ A‘ F@‘ 1@=C‘ I ‘ GF F‘ =‘ D=C ‘ J = ‘ I@‘ ?E @E‘ A‘ D=C ‘ G F‘ F ‘ DCAD@C ‘ ?‘ = @ ‘ GF@C@‘ ?A‘ = = ‘ B A @? @‘ ‘ @JD A @EL‘ A‘ AI = ?‘ ‘ ; 113‘ =?E‘ & @ ‘ ‘ =1 @CG=CE ‘ E@ B@C@E‘ F@‘ C@ ‘ A1‘ 1@ C‘ E@ I@C= A? ‘ @‘ = E‘ F= ‘ F@‘ 1= ‘ A1‘ F@‘ = @‘ FAG@E‘ F= ‘ F@C@‘ G= ‘ F@‘ ?@ @ =C ‘ 1@ A? A ‘ ? @? A?‘ ?‘ F@‘ DC A?@C‘ A‘ CAI‘ F@‘ DCA @T AC‘ ; =?E‘ F= ‘ ‘ G= ‘ JDA I @‘ A‘ C= @‘ =‘ EA I ‘ F= ‘ F@C@‘ G= ‘ =‘ 11 @? ‘ =< ?>‘ 1CA J ‘ F@‘ DCA @ ACH‘ D@C A? ‘ & F‘ C@ D@ ‘ A‘ F@ ‘ D ?>‘ ?‘ 1@=C‘ ‘ ‘ ?A ‘ ?@ @ =C ‘ A‘ = ‘ =‘ D ?>‘ ?‘ 1@=C‘ ?‘ F@‘ ?E J @? ‘ ; =?E‘ F@‘ C J =? @‘ A1‘ = = ‘ 1@=C‘ ?@@ ' A ‘ I@‘ DCAB@E‘ DA?‘ F@‘ C = ‘ ; 1AC‘ 1‘ F@‘ 1= ‘ I@‘ = E‘ A‘ I@‘ EA?@‘ B A @? ‘ =?E‘ =>= ? ‘ F@‘ G ‘ F@‘ =G‘ ! ‘ 4#!>& ‘ E4 !6 4"! ‘ G ‘ DC@ J @‘ 1@=C‘ F@C@‘ ?@@E‘ ?A ‘ I@‘ = = ‘ B A @? @‘ =‘ C@= A?=I @‘ 1@=C‘ A1‘ E=?>@C‘ = @E‘ I ‘ A? C B@‘ B A @? @‘ I@ ?>‘ 11 @? ‘ ; =?E‘ F= ‘ GF@C@‘ 7 F‘ @CCAC‘ ‘ J DC@ @E‘ DA?‘ F@‘ J ?E‘ = ‘ EA@ ‘ ?A ‘ @=B@‘ F@‘ D=C ‘ =‘ 1C@@‘ =>@? ‘ =?E‘ F@‘ E@ B@C ‘ F ‘ J A?@ ‘ ?‘ aCE@C ‘ A‘ >@ ‘ C E‘ A1‘ F= ‘ @CCAC‘ F@‘ J = ‘ @=C ‘ I@‘ = E‘ A‘ D=C ‘ G F‘ ‘ =>= ? ‘ F ‘ G ‘ A‘ = ‘ A‘ A? @‘ CAII@C ‘ F= ‘ ?A‘ = = ‘ E=?>@C‘ ‘ ?@ @ =C ‘ = ‘ =‘ J =?‘ J = ‘ A J J ‘ =‘ CAII@C ‘ G FA ‘ ?>‘ =? ‘ A11@? B@‘ G@=DA?‘ = ‘ I ‘ ?>‘ =‘ ?E@C IA]‘ AC‘ =?E @ <‘ ? @=E‘ A1‘ =‘ D A ‘ ?E‘ F= ‘ GF@?‘ =‘ B = ?‘ A J @ ‘ =?E‘ E@ J =?E ‘ J A?@ ‘ ?A‘ A?@‘ <?AG ‘ FAG‘ 1=C‘ F@‘ G ‘ DCA @@E ‘ F@‘ @=C?@E‘ Z E>@‘ F@?‘ C@1@CC@E‘ A‘ F@‘ 1= ‘ =?E‘ C J =? @ ‘ A1‘ F@‘ @= @‘ = ‘ 11 @? ‘ A‘ I C ?>‘ ‘ G F ?‘ F@ @‘ C @ ‘ A1‘ =G ‘ @‘ = @E‘ F= ‘ F@‘ = A?‘ A1‘ F@‘ DCA @ AC‘ G= ‘ F= ‘ A1‘ =‘ A ?>‘ >@? @ J =?‘ = A @E‘ = ‘ ? >F ‘ ?! F@‘ C@@ ‘ A1‘ A?EA?‘ I ‘ =‘ D@C A?‘ F@‘ ?@B@C‘ =G‘ I@1AC@‘ =?E‘ GFAJ‘ F@‘ J ‘ F=B@‘ D@ @E‘ A‘ I@‘ =‘ B = ?‘ ; =?E‘ F= ‘ F ‘ D@C A?‘ # &6 # #‘ =‘ DC@ @? ‘ B@?‘ F= ‘ @@J@E‘ 11 @? ‘ A‘ = 1 ‘ F@‘ @>= ‘ E@=‘ A1‘ CAII@C ‘ ‘ F@‘ DC A?@C‘ G@? ‘ 1 C F@C‘ =?E‘ @E‘ F@‘ GACE ‘ 7) A ‘ F=E‘ I@ @C‘ AJD ‘ AC‘ ‘ G ‘ =<@‘ A ‘ I@1AC@‘ =‘ J => C= @ H F ‘ F@?‘ G= ‘ =‘ FC@= ‘ A1‘ D@C A?= ‘ B A @? @‘ ; 1AC‘ F@‘ DCA @ AC‘ F=E‘ @B@C T F ?>‘ A‘ 1@=C‘ ?‘ I@ ?>‘ EC=>>@E‘ FCA >F‘ F@‘ C@@ ‘ = ‘ =‘ DC ‘ F=C>@E‘ G F‘ =?‘ ??= C= ‘ C J @‘ ‘ G= ‘ =‘ FC@= ‘ GF F‘ J ‘ ?@ @ =C ‘ =?E‘ ?=BA E=I ‘ DCAE @‘ ? J E= A?‘ ??E‘ A = A?‘ =‘ C@= A?=I @‘ 1@=C‘ GF F‘ J >F ‘ AD@C= @‘ ! ‘ 4 6 &‘ !">& ‘ = ‘ G@ ‘ = ‘ ! ‘ & ! > 4 >&‘ !">& ‘ @‘ F@?‘ AI @CB@E‘ DA?‘ F@!=C> J @? ‘ C>@E‘ I ‘ F@‘ A ? @ ‘ 1AC‘ F@‘ DC A?@CH‘ F= ‘ F ‘ G= ‘ =‘ 1C= E @? ‘ =< ?>‘ =?E‘ ?A ‘ =‘ =< ?>‘ I ‘ B A @? @‘ ; =?E‘ = E‘ F= ‘ ?‘ J =? ‘ = @ ‘ 1C= E‘ GA E‘ DD ‘ F@‘ D = @‘ A1‘ B A @? @‘ = ‘ ?‘ I C> =C ‘ GF@C@‘ FA >F‘ ‘ G= ‘ ?@ @ = ‘ A‘ F=C>@‘ =‘ IC@=< ?>‘ ?‘ F@‘ ?E J @? ‘ @ ‘ F@C@‘ J >F ‘ Iu‘ =‘ A? C B@‘ IC@=< ?>‘ I ‘ =‘ D@C A?‘ 1C= E @?

‘ ‘ 49/‘ (/ "2(4 2& 4* /‘ 1+=/‘ ‘ G +=4 ‘ ‘ ‘ .Y‘ =‘ .HM‘ "‘ D.Y‘ 42‘ DGY

‘ ‘ u ‘ ‘ ‘ 3‘ ‘ ^

>@ ?>‘ =E J A?‘ ? A‘ =‘ FA @‘ I ‘ A A C‘ A1‘ =‘ ‘ AC‘ ?E@C‘ DC@ @? @‘
A1‘ =< ?>‘ AE> ?> ‘ AC‘ A1‘ F=B ?>‘ I ?@ ‘ R*B‘ ‘ F@‘ = E‘ F= ‘
F@‘Z E>@ ‘ E E‘ ?A ‘ E@ @C J ?@‘ F@‘ = @‘ @? C@ ‘ A?‘ F ‘ >CA ?E‘ I ‘
YG@C@ A1‘ AD ? A?‘ F= ‘ F@C@‘ YG= ‘ DCAA1‘ A1‘ =‘ A? C B@‘ B A @? @‘
YGF F‘ F@ ‘ FA >F ‘ G= ‘ 11 @? ;‘ =?E‘ F= ‘ F@ ‘ G@C@‘ = ‘ A1‘
AD ? A?‘ F= ‘ @?A >F‘ G= ‘ DCAB@E‘ ?‘ F ‘ = @‘ 1AC‘ F@‘Z C ‘ A‘ 1 ?E‘
F@‘ DC A?@C‘ > 1 ‘ A1‘ CA I I @C ‘ 1 3
F ‘ EA C ?@‘ =DD@=C ‘ A‘ F=B@‘ I @@?‘ = @E‘ DA?‘ ?‘ I @b @? ‘
= @ ‘ 1 3 ?‘ A?@‘ A1‘ GF F‘ F@‘ D=C ‘ E@ B@C@E‘ F ‘ J A?@ ‘ A @ ‘
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> ?@= ‘ ‘ =DD@=C@E‘ F= ‘ F@‘ DCA @ AC‘ F=E‘ AJ@‘ @J D A J@? ‘
?‘ F@‘ D= = @‘ A1‘ ‘ = J @ H‘ =?E‘ =?‘ =D=C J @? ‘ F@C@‘ ?‘ GF F‘ F@‘
YG=‘ = AJ@E‘ 1A‘ @@D‘ =?E‘ F= ‘ F@‘ DC A?@C‘ G= ‘ A = A?= ‘ =‘
@? ?@ ‘A?‘ > =CE‘ = ‘ F@‘ D= = @ ‘ ?@‘ ? >F ‘ F@‘ DCA @ AC‘ C@= @E‘
F@‘ DC A?@C‘ G F‘ AJ@‘ IC@=E‘ =?E‘ F@@ @‘ =?E‘ = @‘ ?‘ F ‘ CAA J ‘
IA ‘ =‘ 1AC ? >F ‘ =1 @CG=CE ‘ B@C ‘ = @‘ ?‘ F@‘ @B@? ?>‘ F@‘ DCA @T
AC‘ G= ‘ >A ?>‘ D = C ‘ A‘ F ‘ =D=C J @? ‘ GF@?‘ F@‘ F@=CE‘ AJ @T
IAE ‘ A @‘ I@F ?E‘ F J‘ =?E‘ A?‘ C? ?>‘ CA ?E‘ =G‘ F= ‘ ‘ G= ‘ F@‘
DC A 1@‘ GFA‘ = E‘ 7 ‘ ‘ J @ H F@‘ DCA @ AC‘ = <@E‘ F J ‘ GF= ‘
ICA >F ‘ ? J‘ F@C@‘ = ‘ F= ‘ J @‘ A1‘ ? >F ‘ V DA?‘ GF F‘ F@‘ DC A?@C‘
=? G@C@E‘ [‘ = J‘ AJ@‘ 1AC‘ = 1= A?;‘ A ‘ <?AG‘ GF= ‘ D= @E‘
F@‘ A F@C‘ ? >F ‘ ;‘ A ‘ =C@‘ =‘ 4#4&! ‘G‘ =?E‘ 1‘ A ‘ EA‘ ?A ‘ > B@‘ J @‘
= 1= A?‘ ‘ YG ‘ >A‘ =?E‘ 1@ F‘ =‘ @CZ@=? ‘ =?E‘ =‘ 1 @‘ A1‘ J @?‘ =?E‘
=<@‘ A ‘ I @1AC@‘ =‘ Z @‘ ;‘ 1AC‘ ‘ F=B@‘ I @@?‘ ?‘ F@‘ I = <‘ FA @‘ @B@C‘
? @‘ ‘ G= ‘ F@C@‘ = ‘ =Z E‘ ‘ EA‘ ?A ‘ B= @‘ J ‘ 1@ H F@‘ DCA @ AC‘
F@?‘ = <@E‘ F J ‘ GF= ‘ J A?@ ‘ F@‘ J ‘ F=B@‘ GF@?‘ F@‘ DC A?@C‘ = E‘
7 ‘ J ‘ F=B@‘ FC@@‘ AC‘ 1A C‘ > ?@= H F@‘ DCA @ AC‘ >=B@‘ F J ‘
GA‘ > ?@= ‘ GF F‘ G= ‘ = ‘ F@‘ F=E‘ =?E‘ DCA J @E‘ A‘ > B@‘ F J ‘
=?A F@C‘ > ?@=‘ F@‘ ?@] ‘ J AC? ?>‘ ;‘ =?E‘ F@‘ DC A?@C‘ AA<‘ F@‘ GA‘
> ?@= ‘ = ?>‘ 7 * ?E‘ ‘ EA?H‘ E@ J !?E‘ =? F ?>‘ A1‘ A H F@‘
?@] ‘ J AC? ?>‘ F@‘ =J @‘ =?E‘ C@ @ B@E‘ F@‘ A F@C‘ > ?@=;‘ =?E‘ ?‘ =‘ 1@G‘
E= ‘ =1 @C‘ DA?‘ J =< ?>‘ =?‘ =DD = A?‘ 1AC‘ J AC@‘ J A?@ ‘ DA?‘ F@‘
=J @‘ DC@ @? @‘ F@‘ G= ‘ =DDC@F@?E@E ‘ F@‘ DCA @ AC‘ GAC@‘ F= ‘
F@‘ G= ‘ B@C ‘ J F‘ = =C J @E‘ GF@?‘ F@‘ >=B@‘ F@‘ DC A?@C‘ F@‘ GA‘
> ?@= ‘ =?E‘ E E‘ ?A ‘ B@C ‘ G@ ‘ <?AG‘ GF= ‘ F@‘ E E;‘ I ‘ F= ‘ F@‘
D=C @E‘ G F‘ F ‘ J A?@ ‘ ?E@C‘ =?‘ E@=‘ A1‘ DC@ @CB ?>‘ F ‘ F=C= @C‘
1CA J ‘ C@DCA= F‘ =?E‘ ?A ‘ 1CA J‘ F@‘ 1@=C‘ A1‘ D@C A?= ‘ B A @? @‘ F@‘
@=C?@E‘ Z E>@‘ GFA‘ C @E‘ F@‘ DC A?@C‘ ?‘ @=B ?>‘ F@‘ = @‘ A‘ F@‘
Z C ‘ C@ J =C<@E‘ DA?‘ F@‘ DA ? ‘ ?‘ GF F‘ ‘ J >F ‘ I@‘ DDA @E‘ A‘
E 11@C‘ 1CA J‘ F= ‘ A1‘ #A??= ‘ 1&3‘ F= ‘ ?‘ #A??= H ‘ = @‘ F@‘
DCA @ AC‘ F=E‘ GAC?‘ F= ‘ F@‘ E@ B@C@E‘ F ‘ J A?@ ‘ ?E@C‘ =?‘ =DDC@T
F@? A?‘ A1‘ D@C A?= ‘ E=?>@C‘ = ‘ G@ ‘ = ‘ 1CA J‘ F@‘ 1@=C‘ A1‘ A ?>‘ F ‘
F=C= @C‘ ;‘ I ‘ F= ‘ ?‘ F@‘ DC@ @? ‘ = @‘ F@‘ DCA @ AC‘ F=E‘ GAC?‘
F= ‘ F@‘ D=C @E‘ G F‘ F ‘ J A?@ ‘ 1AC‘ F@‘ =<@‘ A1‘ F ‘ F=C= @C‘ A? ‘
=?E‘ ?A ‘ 1CA J‘ =? ‘ =DDC@F@? A?‘ A1‘ E=?>@C‘ A‘ F ‘ D@? A?‘ ‘ F@‘ Z C ‘
1A ?E‘ F@‘ DC A?@C‘ > ;‘ =?E‘ F= ‘ F@‘ DCA @ AC‘ D=C @E‘ G F‘
F ‘ J A?@ ‘ =>= ? ‘ F ‘ G ‘ FCA >F‘ =‘ 1@=C‘ F= ‘ F ‘ F=C= @C‘ J >F

"*B‘ J .‘ E‘ 1.‘ ‘ O
":B‘ 2‘ ‘ +**#S‘ 1+=/‘ .‘ /+19‘ .NH‘ G
+=4‘ ‘ ‘ 1‘ .Y‘ H‘ .HM‘ "‘ D.A‘ 42‘ DGE
"B‘ 4+"*/=S‘ /+=/‘ 10 ; + ‘ S‘ 1+=/‘ ‘ G
+=4‘ ‘ ‘ 1‘ .Y‘ =‘ .HM‘ "‘ DGE‘ 4+"*/=
7+‘ /V/1<4/ : ‘ 3<4 10 ; + ‘ 7+‘ (/P
"(/J/ :‘ 2‘ ‘ 12‘ : 4 2‘ ‘ 2B‘ 4(+‘ ="2(4+4 2‘

4‘ +" " /+(‘ &(2 ;‘ 10 ; + ‘ S‘ 1+ =/‘ W.‘ /+19‘
GDE‘ 49+4‘ 2‘ ‘ +**#‘ 7+‘ ‘ 24‘ /V/1<4/ : ‘ + ‘ :‘
49+4‘ =2 ; /‘ :2<34‘ 9+ :‘ 3/ / ‘‘ / ‘ 4/ (4+ ‘ / :‘
+‘ 42‘ 49/‘ 2" ‘ 2 ‘‘ 2B‘ 49/‘ 47 /*J/‘ 6< :) /‘
‘ ‘ 49+4‘ 1+=/
) *‘ J .‘ " ‘ .M.

34+ ‘ ‘)‘
; 2 ‘ /# 3#
49(/+4/ ‘ ‘)‘ 42‘
4+0/‘ + ‘ 249/ (‘
3/&2(/‘ +‘
6<=4 1/ ‘ 2 ‘‘ +‘
19+()/‘ 2B‘ +4‘
<‘ ‘ +4<(+‘#
2&&/ ‘ 1/ ‘
92 / ‘‘ 42‘ 3/‘
(233/(#‘
492<)9‘ 49/‘
"(2=/1<42(‘
=4+4/ :‘ 49+4‘ 9/‘
"+(4/ :‘ 7 49‘
9 =‘ ; 2 ‘ /#
<‘ : /(‘ + ‘‘ : ~+‘
2B‘ "(/=/(J ‘)‘
9 =‘ 19+(+14/(‘
+ ‘ :‘ ‘ 24‘ &(2 ;‘
&/+(‘ 2B‘
"/(=2 ‘ +‘#
J 2*/ ‘ 1/

C@ @ B@ =? ?Z C '1CAC1 F@ DC A?@CH = = A? I = AJ@EA I G= @? @C = ?@E GF@ F@C F@ = @G= G F ? F@ DC ? D @ DA? GF F #A??= H DCA @@E@E G= I J @E A F@ A? E@C= A? A1 F@ Z E>@ ; =?E F@ C AD ? A? G= =1 @CG=CE E@ B@C@E I FF C A F@ 1A AG J> @11@ $! AJ@ EA I F=B ?> I@@? @C = ?@E = A F@ AD ? A? A1 F@ G@ B@ Z E>@ ? F@ = @ A1 A??= F@ @=C?@E Z E>@ GFA C @E F@ DC A?@C FA >F DCAD@C F= F@ DC@ @? = @ FA E <@G @ I@ C@1@CC@E A F@ C A? E@C= A? F@ F=B@ = ACE ?> A?1@CC@E DA? ; =?E F@ =C@ A1 AD ? A? F= EA@ ?A & 6 !(!6 E 11@C 1CA J F@ = @ A1 #A??= ; 1AC F= < "> # *! ! !4 4*""><< "!!! < 6 ! 2 4" 6 ! 2*"4 & < (E " 4 4" ! < E" 4*6 4 < "E"40 E " 4*6 6 & 4> K4! < > < 6 # 2" *"4" 4" ""4"6 4 ! #> < E6" > 5 ! ! 2 4 E6" ? ! <! <!<' E"4E " G 6 # Z Z! < " < "" 4" 6"! *"4 & " 6 4" ?E # !4 4 < E " 4 4"*"4 & 6 4*! C>" 4 < <64(6 " < 65 &6 4 ! # 4*#!** " 'G 1AC A J A J @? F@ E@= A1 A ?> F@ C 1= J @ =?E C@D = A? @b = 1 ?A J AC@ @CC 1 F=? F@ EC@=E A1 D@C A?= ?Z C F@ DC ? D= ?>C@E @? ? CA I I@C = J =?H I@ ?>*4" # A D=C G F F DCAD@C ; =?E F@ Z ' V ' =C@ ?=? J A A1 AD ? A? F= DA? F@ DC ? D @ A1 =G =?E F@ = FAC A1 1AC J @C E@ A? = FC@= A = @ = J =? A1 F=B ?> AJ J @E F@ >C@= @ A1 = C J @ = ? F@ DC@ @? = @ = = >**! ! *4" A A? @ F@ C J@ A1 CA I I@C I D ?> ? 1@=C H N?d

F = @ @@J A F=B@ >A?@ A F@ 1 %@] @= A1 F@ EA C ?@ DA? GF F DCA @@E@E =?E J I@ A? E@C@E = ? AJ@ J @= C@ b = 1 @E =?E C@ C= ?@E I I @b @? E@ A? ; ? A?@ A1 GF F G= FA E@? F= = F@ DCA @ AC F=E D=C @E G F F ZCCAD@C 1AC F@ D CDA @ A1 A?B ?> F@ DC A?@C =?E =1 @C Fu =DDC@F@? A? A1 ?Z C A F F= C= @C 1CA J F@ 1A F= C>@ F= E @= @E G= ?A CA I I@C ; NAd =?E ? F@ A F@C G= FA E@? I = J =ZAC A1 F@ Z E>@ F= ? ACE@C A A? @ CA I I@C ? = @ A1 F < ?E F@ DCAD@C J I@ =<@? DA? =? J J@E = @ =DDC@F@? A? A1 DC@ @? E=?>@C =?E E A? @? ? F@ F=C>@ I@ ?> J=E@ =?E Y ?A =1 @C F@ D=C @ F=B@ @D=C= @E =?E F@C@ F= I@@? J @ A E@ I@C= @ =?E DCA C@ = =? @ =?E =1 @C = 1C @?E F= = = I@@? A? @E C@ D@ ?> F@ C=? = A? 7E3

(@=?@ G= ?E @E 1AC = F >FG= CA I I@C =?E =< ?> ? ?@ @@? > ?@= =?E = F ?>; =?E & = < ? G= F=C>@E ? F@ =J@ ?E J @? = =? = @ AC I@1AC@ F@ 1= F@ @B E@? @ G= F= A? F@ - F A1 * = . : F@ DCA @ AC J @ (@=?@ ? F@ C@@ @ &!= =? @? C@ C=?>@C A F@ DCA @ AC ; I F@ = <@E 1AC J A?@ = ?> F= F@ G= ? ? >C@= E C@ ; =?E DA? F@ DCA @ ACH C@1 ?> A > B@ F J =? G@? =G= J @C ?> @] DC@ A? A1 =?>@C =?E E A? @? ? ? F@ ?@] E= F@ =>= ? J @ F@ DCA @ AC ? F@ C@@ =?E A E F J F= F@ F=E =<@? ?E@ @? I@C @

W 'B /+ ' /S 1+=/ G /+19 Y.Y G G +=4 ; ' 1 .Y = .HM " DGE 9/ +=4 ' 1 .Y = .HG " DHI "(=2 '/(7+ ' '24 /V/1<4/ :? =// . R B /V +1O=2 ' . +=4 ' ' '24/ RCB J .VV

[d 3 ^ .MA

G F F J ? F@ D=C<% =?E F= F=E I@uF @@?= =?E A E I@
DCAB@E I = F CE D@C A? F@ DCA @ AC% G F =B A @? @] =T
J= A?% = <@E F J GF= F@ J @=? ; A GF F F@ J =E@ ?A C@D %
I G= <@E =G= ?= F@ ?@] E= F@ DCA @ AC C@ @ B@E =
@ @C 1CA J F J A? = ? ?>= J =C J >@ % =?E J @? A? ?> F
D = @ A1C@ E@? @; ?= A? @b @? @ A1GF F F@ DCA @ AC% F=B ?>=
A? @E G F ibC@?E% G= ?E @E A GC @ A F J % =?E =DDA ? '
A J@@ F J ?= F@ C@@ A F@=C GF= F@ F=E A = @= ACET
?> J@ F J F@C@% GF@?= (@=?@ = E% F= 1 F@ DCA @ AC E E
?A > B@ F J JA?@ F@ A E DCAB@ F F=B ?>= AJ J @E ?E@T
@? @ G 'F CF ?= F@ D=C<% = = F E D@C A?= F=E @@?= ; DA?=
GF F F@ A F@C DC A?@C% & = < ? % ZA ?@E F@J % = ?>% 7) @ % '
=G A H F@DCA @ AC @] = J@E% F= = G= = FACC E =IAJ ?T
=I @ 1= ; Z I?= GF F & = < ? = E% 7) A F=B@ >C@= ? @C@
G F F@ >AB@C? J @? ; F= I@ > =E A1 = D = @ = = @C<%
@ F@C ?= F@ AJ AC @] @H F@DCA @ AC = E F= F@
GA E =DD 1AC A?@% DA?= GF F & = < ? G@? =G= (@=?@
F@?= = E%7) A F=B@ > B@?= F= J =?= @C = ; G F=B@ =
@C = ? = A;H DA?=GF F F@DCA @ AC A E F J F= F@ FA E
?1 ' 1A AG ?>= JAC? ?>= (@=?@ J @ F@DCA @ AC I =DDA ? T
J@? % =?E A E F J F= F@F=E A? E@C@E F@ J = @C% F= F@ J
F=B@ G@? DA ?E ?= F% =?E = IA?E 1AC 1 1 DA ?E = @=C;
DA?=GF F F= DCA @ AC% ?D C =? @ A1 = D =?= GF F F@ F=E
DC@B A A? @C @E G F F 1C @?E% A E F J F= F@ A E ?A
> B@ F@ J A F J F@?% I F= 1 F@GA E G= = 1@G E= FR
GA E IC ?>F Z>% F@Z?A?@ =?E F@ IA?E F@DCA @ AC% A?F
?@] ? @CB @G G F (@=?@% A11@C@E F J F@ G@? DA ?E ; I
F@C@1 @E A =<@ F@ JA?@ GE FA F@ IA?E% DA?=GF F F@
DCA @ AC 1@ F@E F@ IA?E% =?E >=B@ % A>@ F@C G F ? ?@ @@?=
> ?@= =?E = F ?>% A (@=?@% GFA =CC @E IA F F@ IA?E =?E
F@ JA?@ =G= G F F J % = ?>% F= F@ GA E ?A > B@ F@
DCA @ AC =? 1 C F@C CA I @ G= AIZ@ @E A?= I@F= 1 A1 F@
DC A?@C F= F DCAA1 G= E@1@ B@; = ?= ACE@C A A? @
CAII@C F@C@ J I@ = B A @? @% AC 1@=C A1 E=?>@C% A F@ D@C A?=
AC F=C= @C; =?E F= F B A @? @% AC 1@=C% J @] = F@
J@ GF@?= F@ DCAD@C D=C @E G F; I F@ = @ G= @1 A
F@Z C % GFA 1A ?E F@ DC A?@C > ; DA?= GF F F@ AD ? A?=
A1 F@ Z E>@ G= =<@?= F@ 1 C A?1@C@? @ F@ Z E>@
N @C% % I@ ?>= I @? d G@C@ ? ?@E A F ?< F= F G= ?A
CAII@C % = F@C@ G= ?@ F@C B A @? @ ?AC 1@=C != F@ J @ F@
DCA @ AC D=C @E G F F DCAD@C C@% % AI @CB@E%
7 F= G A E I@ >A ?>= = @D 1 C F@C F=?= =? A1 F@ = @ A
FA E F A I@ CAII@C F= F@ DC ? D @ A1 CAII@C G= B AT
@? @; =?E GF@C@ F@ JA?@ G= E@ B@C@E FCA >F 1@=C% F= G=
A? C= B@ B A @? @ F= F@ DC ? D @ F@ F=E = @E DA?% ?
F = @ % G= A @=B@ F@ b @ A?= A F@ Z C % G!F@ F@C F@
E@1@?E=? F=E% I @C = ? C J =? @ % J DC@ @E F = @CCAC
A?= F@ DCA @ AC = A C@?E@C F J ? =D=I @ A1 C@ ?>= F@
E@ J =?E F@C@1AC@% GF@?= F@ DCA @ AC GAC@ F= F@ G=
?E@C ?A =DDC@F@? A?= F@ J @% I >=B@ F J A?@ 'A ' A
A?B F@ DC A?@C % F@ ?@>= B@E F@ CAII@C F= F G=
E 11@C@? 1CA J " ACE@?H = @% ROB GF@C@ F@C@ G= = B A @? @

WGb J ; " NI

1AC' F@C@' F@C@' G=' 1@ F@C!= =' ?AC' A? C B@' B A @? @ ' ' J =?' J >F ' I@' = E' A' =<@' I ' B A @? @' GFA' E@DC B@E' F@' A F@C' A1' F@' DAG@C' A1'C@ =? @%' I ' GF= @B@C' J @=? ' F@' E E' ' ?E' I@' =G' ?A' @? I @' E ? A?' I@ G@@?' =' D@C A?=' B A @? @' A' F@' D=C ' F J @ 1%' =?E' F@' = @' D ' A?@' A1' F@' Z E>@ ' A1' =' J =?' FA E ?>' =?A F@CH ' F E' AB@C' =' C B@C%' =?E' FC@= @? ?>' A' FCAG' ' ?' ? @ ' F@' >=B@' F J ' J A?@ H F@' Z E>@ ' FA >F ' F@' J = @C' E@ @CB ?>' A1' 1 C F@C' A? E@C= A?;' I ' F@ ' J = @ ' =EF@C@E' A' F@' AD ? A?' A' GF F' F@ ' F=E' = ' 1 C ' ? ?@E;' =?E' F@ E' N @C% %' I@ ?>' =I @? d' F= ' F@' A?B A?' G=' G CA?>;' = ' F@ ^@' G= ' ?A' B A @? @' @ F@C' = =' AC' A? C B@% *3' ₱

+0 ')' ;2'/# &(2 ;' 49f "(2=/1<42(' <''2 '' +49(/+4 42' +11<=/' 9 ;' 2& +'' <' '+4<(+* 2&&/'1/' 9/*:' '24 42' 9f (233/(#' <'*/=' 49f ;2'/# 7/(f 4+0/'' ; ;/[' :'*+4/*# <"2'' 49f' 49(/+4 ;+:/' +' :' '24 +&4/(' 49f "+(4 /=' 9+:' =/"+(+4/: ' +' :' 49/(f' 9+:' 3// '' 4 ;/' &2(' 49f "(2=/1<42(' 42' :/* 3/(+4f' +' :' "(21<(f' +== =4+'1/? +' :' ;2(f /="/1 +**# '24' ' 79/(f' 49f "(2=/1<42(' 12'=<*4/:' +' &(/' : ' +' :' =<19' &(/' :' 7+=' "(/=/'4 79/'' 49f ;2'/# 7+=' "+ :

A=' < A?%' F D @ %' =?E' * ACC ' G@C@' ?E @E%' ?' 9 -%' 1AC' CA I I ?>' A?@' & ' ' ?' F@' EG@ ?> FA @' A1' A?@' ' 'AG@' F@' @B E@? @' A1' F@' DCA @ AC' G= %' F= ' GF @' F@' G=' FC@ F ?>' ?' F ' 1= F@CH' I=C?%' = '=' D = @' = @E' E ?>%' F@' DC A?@C ' F D @ ' =?E' * ACC ' =J @' A' F J %' =?E' = <@E' 1' & ' ' B@E' F@C@%' A' GF F' F@' =? G@C@E' F= ' F@' G=' F@' J=?' F@ ' F@?' = <@E' F J ' 1' F@' C@J @J I@C@E' ?>' G F' GA' A E @C ' AJ@' J @' I@1AC@'[=?E' DA?' F ' = ?>' F= ' F@' E EZ' F@ ' = E' F= ' A?@' A1' F@' A E @C %?=J @E' = < A?%' F=E' = E' F= ' F@' F=E' 6:> #' F J ';' =?E' F= ' = < A?' G=' F@ ' V8 J @' AB@C' A' =C A?%' N=?' =EZA ? ?>' D = @%d' =?E' GA E' @C = ? ' 1A AG' F@' =G%' ? @ ' F@' GA E' AJ@' =?E' J =<@' ' D' G F' F J ';' I ' F= %' 1' F@' G@?' F@C@%' =?E' J =E@' ' D' G F' = < A?%' F@C@' GA E' I@' ?A' J AC@' A1' ' F@' DCA @ AC' =? G@C@E%' F= ' F@' <?@G' ?A F ?>' A1' F@' AC %' I ' F= ' F@' GA E' >A' =?E' F@=C' GF= ' = < A?' F=E' A' = ' F D @ ' =?E' * ACC ' F@?' G@?' =G= ';' =?E' F1' DCA @ AC' 1A AG@E' F@Z?' A' =' D I FA @%' <@D ' I ' ' (AG@%' = ' =C A?%' GF@C@' F@' = A' 1A ?E' F@' DC A?@C' = < A?%' =?E' =?A F@C' A E @C ' AJ@' A?T B@C = A?' AA<' D = @' ?' =' DC B= @' CAA J%' GF@?' = < A?' DC@1@CC@E' F@' =J @' F=C>@' =>= ? ' F@' DCA @ AC' A1' F ' F=B ?>' ??= C= ' =I @E' F J ;' GF F' G=' DA B@ ' E@? @E' I ' F@' DCA @ AC' ' = ' = < A?' A E' F@' DCA @ AC%' F=' 1' F@' GA E' D=' F J ' F@' @]D@? @ %' F@C@' FA E' I@' ?A' J AC@' A1' $ =?E' DA?' F@' DCA @ AC' = ?>' F=' F@' G=' G ?>' A' D=' =? F ?>' ?' C@= A?%' * ACC ' =?E' F D @ ' J =E@' A '=' AC' A1'= A ? %' I ' @ ?>' EAG?' ?' GC ?>! F@' 1A AG ?>'=C @ '=' J @? A?@E' I ' = < A?' $ ` 7#A AC%' i ' ' 1 E;' 1AC' =I ?>' J @%' S ' 9 ;' * A C %' ;' F D @ %' 8 ;' F@' A F@C' A E @C%' - ' 1 E ;H F@' A =' G=' i ' . ;' I ' F@ ' = <@E' A' F=B@' 1A C' > ?@= ' F@' DCA @ AC' = E' F@' F=E' ?A' F' J A?@ ;' I ' DA?' F@ C' ? ?>' DA?' F=B ?>' %' F@' = E' F@' GA E' C ' A' >@ ' '1CA J' F ' D=C@? ;' =?E' = <@E' A?@' A1' F@ J' A' = AJ D=? ' F J %' GF F' F D @ '= ACE ?> ' E E ' F@' DCA @ AC' GAC@' F=' F@' G=' J F' 1C >F @?@E' =?E' F CC @E%' =?E' E E' ?A ' <?AG' GF=' I@ ' A' EA' @' G@? %' FAG@B@C%' = AJ D=? @E' I ' F D @ %' A' F ' J A F@CH ;' =?'E%' ?E@C' F@' DC@ @? @' A1' =' A E @C' F=B ?>' I@@?' F C %' A I = ?@E' 1CA J' F@C' 1A C' > ?@= ' ?' F@ C' C@ C?' A' F@' D I FA @%' F@' DCA @T AC' ADD@E' = ' F@' FA @' A1' A?@' F@ A?%' =?E' DC@B= @E' DA?' F@ A?' A' >A' = A?>' G F' F J ' F@ A?' ?b C@E' GF=' G=' F@' J = @C;' =?E%' DA?' I@ ?>' ?1AC J@E' I ' F D @ %' E@ =C@E' F ' E I@T @1' A1' F@' F=C>@%H=?E' = E' F=' 1' ' G@C@' F ' AG?' = @' F@' GA E' ?A ' D=' F@' J A?@ ';' DA?' GF F' F D @ ' = E%' F=' 1' F@' DCA @T AC' E E A ' D=' F@' J A?@ %' ' GA E' A ' F J ' i8 ' AC' i %' AC

F= F AC A1 1@ C A 1=C E 11@C@E 1CA J = @ A1 J @C@ IAE 1@=C F= G= ?A <@ A I@ E D@ @E = ? FA @ = @ I F=B ?>! F@ ADDAC ? A1 =DD ?>A J => C= @ AC A F@C 1AC = =? @ ; F@ J A?@ I @ '> B@?A DC@B@? F@ D I E A C@ A1 F@ F=C>@ N d

* C = GFA @ F = @ 1CA J * E N d >>@ @E = b @ A? GF@ F@C F@ E@ A? E E ?A ? = >C@=1 J @= C@ AB@CT C @ F@ @= @ A1 < J =? GF F J @? A?@E ?F@ DC@ @E ?> D=>@ NGd NGA E I@ AI @CB@E F= F@ C J =? @ A1 F@ @ = @ J = @C = E 11@C ; =?E C=C =C F= ? < J =?H = @ F@ GA > ?@= G@C@ > B@?! & & #!6 ' DA ' F@ F=C>@ I@ ?> J =E@ =?E F= F@C@ G= ?A DC@B A =DD = A? A =? 1C @?E AC A F@C D@C A? 1CA J GFA J =EB @%AC = =? @ J >F F=B@ I@@?DCA C@E 4

< J =?H = @ G= =>= ?A I @CB@E DA? ? =' = @ GF F A CC@E FAC =1 @CG=CE F@ DC A?@C G@? G @ A F@ FA @ GF@C@ F@ DCA @ AC B@E ?' @CB @ =?E' = @E F J =' AEA J @ =?E I ` ` C F@ DCA @ AC AA<' F J @= F J @ I@1AC@ =' J => T C= @ GFA E F=C>@E F@ DC A?@C ?' @=B ?>' F@ J => C= @ F@ DC A?@C 1A AG@E F@ DCA @ AC =>= ?' = @E F J =' Nz ' ? @ =?E 'C =?E' = <@E F J A J =<@ F J =' DC@ @? = E F@ GA E ?@B@C @=B@ F J F@ F=E D @E F@ FA @ EAG? I 1 F@ E E J =<@ F J =' F=?E A J @ DC@ @? F@ GA E CA I =' F J ?A JAC@ @ = <@E 1A C > ?@= =?E' F@ DCA @ AC I@ ?> 1C >F @?@E 1AC F C@D = A? =?E' 1CA J 1@=C A1 A ?>F = A? F@ DC A?@C G= A?B @E I@1AC@ A F= J N @ =? =?E' F= J ICu N I@ ?> DC@T @? d I DA?' =' EA I ' ?' F@ 5C B A ? F@ AD ? A? A1 F@ Z E>@ G= =<@? * A A1 F@ Z E>@ FA >F F= F G= G F ?' < J =?H = @ =?E' ? ?@ A1 F@ J NBd @@ J @E A F ?<' < J =?H = @ I ?E ?>% I F@ FC@@' A F@C 7? 3 FA >F ?A =G 7?3 @@ J F= F@ DC A?@C G= D=CEA?@E N d

?' =' = @ GF@C@ F@ DC A?@C F=E' I@@?' G F' F@ DCA @ AC = @?' AH A <' ?' F@ J AC? ?>% =?E' F=E' FC@= @?@E' A' DC@1@C F@ F=C>@ A1 =?' = @ J D A' AJ J =?' ??= = C J @% 1' F@ E E' ?A > B@ F@ J' i ; A?@ A1 F@ J' DC@ @?E@E' A' F@ =?' = =?' DA @ A11 @C% =?E' A' F J' F@' DCA @ AC F=E' > B@?' i F@' ? >F I@1AC@ F@ DCA @ AC 1]@E A' J @@ F@ J' F@' ?@] J AC? ?>' = ' ? ?@ AH A <% I F@ = J @' =>= ?' F= ' ? >F ' = ' ? ?@% =?E' = E' F@ A E'?A G= % =?E' F= % = ' F@' DCA @ AC F=E' ?A i =IA F J % F@ J =<@' F J' A' AG C@@ @' F@?' =>C@@E' A' >A% =?E' F@ = @E' =' A= F% =?E' F@' >A ' ?' F@ F@?' = E' 1' F@' GA E' DCA C@' F@' J A?@ F@ GA E'?A DC@1@C' F@' F=C>@ @' G@?' A' =' 1C @?EH % =?E' >A i % =?E' >=B@' A' F@ J @' G= F@C@' = IA 1 B@' J ? @ F@' DC A?@C ' G@?' A' F@ FA @' G F' F J % =?E

WM /V .F +10=2' .' +=4' N J 'VV W J : ' VV J ' '' 4*6/ ; +() ' W44 J S.' " ' .MH ' O "&B 9+ ; 3(/' /' *+'1' 220/' 92 ; =2 ' ' (=/' /+49' 249+ ; ' 0 2 '+*:' +' :' 2(:' *J+'*/# "N ! (+9+ ; ' +7(/'1/' +' :' 2(:' **/ '32(24)9

[2(:' **/ '32(2<)9 492<)94 49+4 49/ "(2=/1<42(S " ('1 "+* ' :<1/ ; /'4 '' 49/ "(/=/ '4 1+=/ 42 "+(4 7 49 9 = ; 2 '/# 7+= 49/ &/+(U2 +' *2== 2 * = "*+1/ +' :'9 = *2(: =9 "* =+ :' 4* +4 9/ =92<* :' &// * '2 : & * 1<*4# '' (/12 ; ; / ' : ')' +" +(:2' "B 6 0 (' * ; =4/+: ' 19' .EMG' +#*/#

11 5 +% x 3 z 3 ^ .MN

G= @E 1AC F J ? F@ C@@ DA? F@ C =3% F@ DCA @ AC = E F@ G= ?E@C F@ =DDC@F@? A?' A1 I@ ?>' =CC @E I 1AC @ ? A AE % I F= F@ E E ?A > B@ F@ J A?@ ?E@C F@ J DC@ A?' A1 E=?>@C A F D@C A?' F@ DC A?@C G@C@ A?B @E%=?E% DA?' = = @ C@ @CB@E% @?' A1 F@ Z E>@ F@ =' F= F@ = ?>' F@ A= F% =?E >@ ?>' ?' G F F@ DCA @ AC% G!= =' 1AC I @ A? C= ? DA?' F J % =?E' 11 @?' A' A? @' =' CAII@C % FA >F' F@ F=E' ?A' =DDC@F@? A?' A1 1 C F@C ?Z C A F D@C A?' ; I 1 B@ 783 A1' F@ Z E>@ FA >F F= AJ@ E@>C@@ A1 1AC @ AC B A @? @ G= @ @? = % =?E' F= F@ J @CL' =DDC@F@? A?' A1 E=?>@C A F@ F=C= @C GA E ?A I@ 11 @? H A' A? @' F@ A11@? @ B@ N=d A F@C A1' F@ Z E>@ @@J@E' A' F ?< GA E N d

? = = @C = @ F ' DA ? = J @ =>= ?' ?E@C F@ A? E@C= A?' A1 F@ Z E>@ % =?E 1 =DD@=C ?AG' A' I@ @ @E' F= 1@=C A1' A A1' F=C= @C =?E' @CB @% DA?' =' F=C>@' A1' AEAJ =O' DC= @ % 11 @?' A' A? @' CAII@ % FA >F' F@' D=C F= ?A' 1@=C' A1' I@ ?>' =<@?' ? A' AE % AC A1 D ? FJ@? F@' DC A?@C =G' F@' DCA @ AC% =' @CB=? % GFAJ' F@' <?@G% = F J = @CH EAAC% =?E' =DD @E' A' F J' 1AC i 8% = ?>' JA?@ F@' GA E' F=B@% =?E' F= A1' F@' ' @ AC @' F@?' E@J=?E@E' S =?E' = E% F= 1' F@' E E' ?A' ?'=? >@ F@' GA E' >A' ?' A' F@' DCA @ ACH' J = @C' =?E' G@=C F= F@' DCA @ AC G=? @E' A' =<@' E =IA = I@C @ G F' F J F@?' F@>%C ?>' AJ@' JA?@ 'Z ?> @' ?' F@' DCA @ ACH' DA <@ F@' E@J=?E@E' % =?E' F@' DCA @ AC >=B@' F J % I@ ?>' A?@' F ?>' =?E' AJ@ F= 1D@? @' @' F@?' ?b C@E' =IA F@' DCA @ ACH' A F@ % =?E' Gb1@' FZ JA?@ F@' GA E' F=B@% AC F@' B= @% I@1AC@' F@' @1 F@' FA @% DA?' GF F' DCA @ AC 1@ F@E' F J D' =' A= % =?E' F@' F@?' G@?' =G= F@' DCA @ AC = @E' ?' F @B E@? @% F= F@' >=B@' F@' DCAD@C 1AC 1@=C A1' F F=C= @C' =?E' D = @% F= F 1@=C G= % F= F@' DC A?@C GA E' >A' ?' A' F J = @C% I F= F@' F=E' ?A' 1@=C A1' I@ ?>' =<@?' ? A' AE % AC A1' D ? FJ@? F@' DC A?@C G= A?B @E% =?E% DA?' = = @ C@ @CB@E% = F@' Z E>@ % @] @D C=F=J % % FA >F F= F G= G F ?' <T J =?H = @% =?E' F= F@ G@C@' IA ?E' I F= = @% =?E' A E' ?A' DCAD@C E@D=C 1CAJ' ?E' (F=CE % % = @ % % =?E' A CA E% % @]DC@ @E' F@ C AD ? A? F= < J =?H = @' G= C >F % I@ = @' F@' F=C>@' A?B@ @E' F' =' E@>C@@' A1' @CCAC' = J >F I@' @]D@ @E' A' AB@CDAG@C' =' 1 CJ' =?E' A? =?' J ?E " A?@' A1' F@' A F@C' Z E>@ % @] @D C=F=J % % ? J = @E' =' A? C=C AD ? A?' ?E' F@' A?B A?' G= =1 1 CJ@E% N d

DA?' =?' ?E J@?' 1AC CAII@C ' =DD@=C@E' F= F@' DC A?@C F=E' AI = ?@E' F@' JA?@ I FC@= @? ?>' A' = @' F@' DCA @ AC A1' =?' ??= C= C J@' ; F@' DC A?@CH E@1@? @' G= % F= F@' DCAT @ AC F=E' J=E@' =?' = @JD' A' AJJ ' F' C J @% =?E' F=E' BA ? =C > B@?' F J' F@' JA?@ ?A A' DCA @ @' F J' 1AC ' @E= @% % C @E' F= ' G= @b = =' CAII@C ' A' AI = ?' =' J =?H' JA?@ ' I ? J E= ?>' F J' G F' =' FC@= A1' =?' = T = A?' A1' =?' ?1=JA ' C J@% GF@ F@C' F@' DCA @ AC G@C@' C@= > A1' Fp' C J@' AC ?A ' ; = 1' F@' G= > % F@' DC A?@C' A >F

/+(2& *2=-' 2& 19+(+14/(+' :' =/(J 1/' <"2 '' +' 19+()' 2& =2:2 ; 4 1+' "(+14 1/=' =' =<&& 1 / '4 42' 12 '=4 4<4' (233/(#' 492<)9' 49/' "+(4# 9+=' '2' &/+(2& 3/)' 4+0/ '" '42' 1<=42:#' 2(2& "<' =9 ; / '4

4' = ; ; +4/(+# 79/49/(49/' "+(4# 3/')< *4# 2& 49/' 1(; /' 2('24

RVB' 2(:' **/'92(2<)9' 49/' 9 /& W&4D' /V' +''2'' [+#*/#' +(2'' +7(/'1/' 9+ ; 3(/'+':' !(+9+ ; +':' ' ' ' .IY " B' /+49' !(2=/' 92 ; =2'' /' *+'1' W1D' /V')/(42'' +#*/#' +':' 22: +':' ' ' ' HDA?

DC A?@C J=E@ F@ =J@ F=C>@ ?F@=C Z > F@ F=C>@ I@1AC@ F@ J => C= @ F@ DC A?@C = @E F= F@ DCA @ AC = >F FA E A1 F DC B= @ D=C ; =?E C@ G@ F@ E F= @B E@? @ A1 E@ =C= A? A1 F@ DC A?@C A?=1AC J @C A = A? A? A J ?> A11 > =CE F= F@ F=E AI = ?@E J A?@ 1CA 1=>@? @ J =?I FC@= @?T ?> A =<@ F J A F@ > =CE FA @ =?E = @ F J A1 =?? ? ?= C= U C J@ C'= =EJ I @ F@ @B E@? @ G= ?A A11@C@E I G= A1 DCAB ?> JD F= F@ DC A?@C F=E I@@?!> A1 F@ =J@ C J@ I@1AC@ F@ b @ A?@ G= GF@ F@C A?@ F A = A?@ F@ E E=?= G N' F@ E@ >?@ A1 @11@ ?>=@C = ?@ AIZ@ ?@ @D ?@ F@ DCAA1 G= A FAG F= F@ GA E I@ <@ A <?AG F= = @C 1 ?@ C@ GA E 1A AG =?E@ 1@ A E I@ DCAB@E A A1F AG?@ JA F F= F@ G= =G=C@ F= F=C@ GA E I@ DCAE @E G= ?> ?@ F@ E@ >?@ A1 @11@ ?>=@C = ?@ AIZ@ ?@ G F C@1@C@? @ A F@ F=C>@ J=E@ =>= ? F J =?E@ GF= G= = E I F J ?E@C J =C C J =? @ A F@ DC@ @? &= =EJ T I @ Nd

GF@C@ A?= J =C ?E J @? =DD@=C@E F= F@ DCA @ AO'=E >A?@ ? A= ! ?= 1AC F@ D CDA @ A1 @= ?> F J @ 1 GF@?C F@ DC A?@C =J@ 1CA J=?=EZA ? ?>D=C A? =?E = E A F J 1 A EA?A > B@ J@= AB@C@ >? G F=C>@ A G F=?E@ @? = = ; C @ F@ E F= DCAA1 F= F@ DC A?@C F=E J=E@ = J =C4 F=C>@ =>= ? =?A F@C D@C A?@ GA @=C I@1A H@ =?E GF@?@ =<@?@ ? A AE >=B@ =1= @ =EEC@ G= ?A =EJ 'Z I @ F@ E@ A?@ ?@ - 2 B J44E "' 1C3 G= ?A =DD =I @ F@C@ F@! J = ?@ b @ A?@ C?@E DA?@ F@ ? @? G F GF F F@ = = A?@ G= J=E@ =?E F@ @B E@? @ G= F@C@ =EJ @E A FCAG >F DA?@ F= IZ@ ?@ F = @ F@ ? @? G= b @ J =? 1@ 1 F@ DCA @ AC G= I@ @B@E 1D 3

4 = @ ? @ F@ 3 @ 9. : GF F G= J =C A @ A?@ A1 F@ DC@ @? 16 D 9 d%U G= F@ E F= =?@ ?E J @? ?@ F@ ACE ?=C 1AC J 1AC CA I I@C G= ?b DDAC @E I DCAA1 A1 @] AC ?> ?A?@ I C@= A1 = ?> A1 = ?1=JA C J @ G F ?@ F= @ A?@ F@C@1AC@ =D@C A?@ DC@ @? A = E@ A @] AC J A?@ I F =D@ A?B @E A1 =CA I I@C G F @11@ @E I F J G F = =B A @? @% F D@C A?@ I@ ?> ?A D=C A F B A @? DA?=?@ ?E J @? ?@ F@ ACE ?=C 1AC J => >= ? = ? A?=?E @?C 1AC CA I I@C G= DCAB@E F= =IA ? ?@ AH A <= ?F J @ ?E @E F@ DCA @T AC A G= <G F F J ?A =FA @ ?& @ J ? @C F@?1 ?> D = = AA<H FAD ?E@C F@ DC@ @? A1 F@G ?> F J ! F@ 1 ?> $ GF@?@ F@ F=E @? @C@E F@ DC A?@C A <@E F@ EAAC @K@E F J I F@ A =C A E F J F@ F=E F J ?@ F DAG@C =?E 1 F@ J =E@ =?A @ F@ GA E @?E 1AC F@ DA @ =?E F=C>@ F J G F AEAJ = DC= @ $ F ?E @E F@ DCA @ AC ?A A > B@ F@ = =CJ =?E F@?@?C C 1 @E F DA <@ A1 = AB@C@ >?=?E = F ?>=?E DCA @@E@E A =<@ F@ G= F 1CA J F@ 1AI =?E J J @E = @ =1 @CG=CE

W4 /) 22"/(H 2V A AID 12'4+ ' ') 49/ +11<=+4 2'' +)+ '=4 49/ %*B "(2=/1<42(7/(/ +: ; == 3*/ "<4 '24 49/ e:B /) 0 2' '/** A 2V 1(2== /V+ ; '+4 2'=2 49/ "(=2'/(=' /
.AH '' /) &' (+#'/** I 2V 49 = 1+=/' 0 3
IMG ** + ; =' & /*:'49+4 :/"2=4 2'= D .'J2*'H'3220'A'19+"' J

'1/ 49/ /4 1' ED' 4 7+= 9/*:' 49 4 +'' ' : 14 ; /'4 &2((233/(# 7+= '24 =<""2(4/ :' 3# 49(/+4= 2 +11<= ')'2 + '' '&+ ; 2<= 1(; / 7 49 '' =/1').' 3<4 =/ / 49/ ' /V4 1+=/

AA<‘ AJ@‘ C ?> ‘ 1CA ‘ F ‘ 1 ?>@C ‘ ;‘ AJ@‘ ?A @‘ G= ‘ J =E@‘ GF @‘ F ‘ G= ‘ >A ?>‘ A?%‘ =?E‘ = ? A?%‘ GFA‘ G= ‘ ?‘ F@‘ FA @%‘ =J@‘ A‘ F@‘ EAAC‘ A1‘ F@‘ CAA J%‘ =?E‘ =1 @C‘ C ?>‘ ?‘ B= ?‘ A‘ >= ?‘ =E J =? @‘ FCA >F‘ %‘ >A ‘ ?‘ = ‘ F@‘ G ?EAG‘ ;‘ F@‘ =J@‘ ? A‘ F@‘ CAA J‘ =1 @C‘ @?C ‘ F=E‘ C 1 @E‘ F@‘ DCA @ ACH‘ DA <@ %‘ =?E‘ GF ‘ F@‘ G= ‘ C@ J AB ?>‘ F@‘ G= F > =CE‘ ;‘ F@C@‘ G= ‘ =‘ =?E @‘ I C? ?>‘ ?‘ F@‘ AC?@C‘ A1‘ F@‘ CAA J‘ ;‘ = ? A?‘ AA<‘ ?A‘ D=C ‘ ?‘ F>‘ CAFI@C %‘ =?E‘ ‘ G= ‘ ?A ‘ b @‘ @=C‘ F= ‘ F@‘ =G‘ ‘ F@‘ Z C ‘1A ?E‘ @?C ‘ > %‘ =?E‘ F= ‘ = ? A?‘ G= ‘ DC@ @? ‘ = ‘ F@‘ J @‘ A1‘ F@‘ =< ?>‘ A1‘ F@‘ C ?> %‘ =?E‘ G= ‘ =‘ D=C ‘G F‘ @?C ‘ A‘ =‘ E@ >?‘ IC ?>‘ F@‘ DCA @T AC‘ F@C@%‘ =?E‘ AI = ?‘ J A?@ ‘ =?E‘ DCAD@C ‘1CA J‘ F J‘ A?‘ =‘ 1= @‘ F= H>@‘ A1‘ =?‘ ??= C= ‘ C J @%‘ I ‘ F= ‘ !F@‘ G= ‘ 11 ‘ = E ?>‘ AC‘ = ?>‘ ?‘ AC‘ DC B ‘ A‘ F@‘ CAII@C ‘ AJ J @E‘ I ‘ @?C %‘ I ‘ =< ?>‘ 1CA J‘ F@‘ D@C A?‘ A1‘ F@‘ DCA @ AC‘ ‘ @@ (@E‘ A‘ 5=C<@%‘ %‘ F= ‘ ? @‘ F@‘ ‘ 3 @ ‘ ‘ 9.%‘ ‘ :%‘ F@‘ A11@? @‘ A1‘ CAII@C ‘ =?E‘ A1‘ AI = ? ?>‘ JA?@ ‘ AC‘ >AAE %‘ A?‘ =‘ F=C>@‘ A1‘ AEA J ‘ G@C@‘ E ? ‘ A11@? @ %‘ =?E‘ F= ‘ = ? A?‘ A E‘ ?A ‘ I@‘ A? E@C@E%‘ ?E@C‘ F@ @‘ C J =? @ %‘ = ‘ =‘ DC ? D= ‘ ?‘ F@‘ @ A?E‘ E@>C@@‘ A‘ F@‘ CAII@C ‘ ;‘ =?E%‘ DA?‘ =‘ = @‘ C@ @CB@E%‘ F@‘ Z E>@ ‘ FA >F ‘ F= ‘ ?= J F‘ = ‘ F@‘ ‘ 3 @ %‘ ‘ 9.%‘ C@D@= ‘ F@‘ . F‘ @ A?‘ A1‘ F@‘ .‘ ,‘ 9‘ @A‘ :%‘ ‘ - %‘ F@‘ A11@? @‘ ? @?E@E‘ I ‘ = ? A?‘ G= ‘ F= ‘ A1‘ @] AC ?>‘ JA?@ ‘ I ‘ @? =T A?%‘ , %‘ ?E@C‘ F@‘ ‘ 3 @ ‘ ‘ 9.%‘ =?E‘ ?A‘ A?>@C‘ CAII@C %‘ ?E@C‘ F@‘ .‘ ,‘ 9‘ @A‘ :%‘ ‘ - %‘ =?E‘ F= ‘ F@‘ A?B A?‘ G= ‘ F@C@1AC@‘ GCA?> ‘ 7 3

‘‘+==+<*4‘ +‘ :‘49(+‘ 2‘ 19+()ƒ‘7 49‘ +‘‘ ‘&+ ; 2<=‘ 1(; ƒ‘7 49‘ ‘4/ ‘ 4‘49/(/3# 42‘ /V42(4‘ ; 2‘ /#‘ 7+=‘ ;‘ +==+<*4‘7 49‘ ‘4/ ‘ 4‘42‘ (23‘ <‘ ‘ ; /(‘ .‘ /4‘ 1‘ ED‘ =‘ H‘ / ; 3*ƒ‘ 4‘ =‘ =4 **(233/(# 42‘ /V42(4‘ ; 2‘ /# 3# 49(/+4/ ‘ ‘)‘+‘ 19+()ƒ‘2& =2:2 ; #‘ 1

%‘ F@‘ DC@ @E ?>‘ E@ A?‘ G= ‘ b @ A?@E‘ ?‘ F@‘ 1A AG ?>‘ = @‘ C ?>@C‘ =?E‘ " @G @=E‘ G@C@‘ A?B @E‘ A?‘ =?‘ ?E J @? ‘ 1AC‘ = = ?>‘ G F‘ ? @? ‘ A‘ CAI ‘ F@‘ DCA @ A1‘ DCAB@E‘ F= ‘ F@‘ G= ‘ ?‘ E@‘ 5=C<‘ = ‘ =‘ @‘ =1 @C‘ ? ?@‘ = ‘ ? >F %‘ GF@?‘ F@‘ G= ‘ = A @E‘ I ‘ " @G @=E%‘ GFA‘ = <@E‘ F J‘ F@‘ ?@=C@ ‘ G= ‘ A‘ F@‘ %‘ GF F‘ F@‘ DCA @ AC‘ A E‘ F J‘ JA ‘ J J @E = @ ‘=1 @C‘ C ?>@C‘ =J@‘ D‘ 1CA J‘ I@F ?E%‘ =?E‘ @ K@E‘ F@‘ DCA @ AC‘ I ‘ F@‘ A =C%‘ =?E‘ = E‘ A‘ F J%‘ 7) A ‘ E= J ?@E‘ I@= %‘ A ‘ F=B@‘ I@@?‘ ?E@ @? ‘@]DA ?>‘ A C‘ D@C A?‘ ;‘ ‘F=B@‘ I@@?‘ G= F ?>‘ A ‘G F‘ A C‘ 1C @?E‘ H NDA ? T ?>‘ A‘ " @G @=Ed‘ 71AC‘ FC@@ b =C @C ‘ A1‘ =?‘ FA C H C ?>@C‘ F@?‘ 1AC @E‘ DCA @ AC‘ A‘ >A‘ A‘ =‘ DA @ = A?%‘ " @G @=E‘ = AJ D=? ?>‘ F@ J‘ D=C ‘ A1‘ F@‘ G= ‘ ‘ F@‘ = A?‘ C ?>@C‘ C@D@= @E‘ F@‘ F=C>@‘ GF F‘ F@‘ F=E‘ J =E@‘ GF@?‘ F@‘ 1 C ‘ @ K@E‘ F@‘ DCA @ AC%‘ =?E‘ =EE@E‘ F= ‘ F@‘ DC B= @‘ D=C ‘ A1‘ IA F‘ J @?‘ G@C@‘ @]DA @E‘ ;‘ F= ‘ A?@‘ F=E‘ F ‘=C J ‘CA ?E‘ F@‘ ?@ <‘ A1‘ F@‘ A F@C‘ ;‘ =?E‘ @= F‘ A1‘ F@ J‘ F=E‘ IA E‘ A1‘ F@‘ DC B= @‘ D=C ‘ A1‘ F@‘ A F@C ‘ F@‘ GFA @‘ F=C>@‘ G= ‘ =‘ 1 A?%‘ =?E‘ J =? ‘ C J =? @ ‘ G@C@‘ DCAB@E‘ A‘ FAG‘ F= ‘ F@‘ GFA @‘ G= ‘ =‘ DC@ A? @C @E‘ D =?‘ I@ G@@?‘ F@‘ DC A?@C ‘ 1AC‘ F@‘ D CT DA @‘ A1‘ @] AC ?>‘ JA?@ ‘ 1CA J‘ F@‘ DCA @ AC‘ ‘ "A‘ JA?@ %‘ FAG@B@C%‘ G= ‘ > B@?‘ (A 1@%‘ %‘ A E‘ F@‘ Z C ‘ F= ‘ 1‘ ?>@C‘ G= ‘ = ?>‘ ?‘ D C =? @‘ A1‘ =‘ DC@B A ‘ D =?%‘ =CC=?>@E‘ G F‘ "@G @=E%‘ G F‘ =‘ B @G‘ A‘ ?E @‘ F@‘ DCA @ AC‘ A‘ > B@‘ F J‘ JA?@ %‘ ?‘ ACE@C‘ F= ‘ F@‘ J >F ‘ @ =D@‘ F@‘ =??A =? @‘ = @?E ?>‘ F‘ =‘ F=C>@%‘ F= ‘ G= ‘ =?‘ = = ‘ G F‘ ? @? ‘ A‘ CAI ‘ ;‘ =?E%‘ DA?‘ =‘ = @‘ C@ @CB@E‘ DA?‘ F@

" B‘ /) ‘ ; ‘ / ‘ (#‘ G‘ 22‘ ‘ ‘ ‘ *E ‘ ‘ N ‘HMN‘ 233/ #‘ =‘ +‘ 12 ; ; 2 X*+7‘ &/*2‘ #‘ + ‘ :‘ 4‘ =// ; =‘ T< 4/‘ 1*/+(‘ 49+4‘ ‘2‘ / ‘ +14 ; / ‘ 4‘ 2&‘ +‘ ‘ /7‘ 2&&/ ‘ 1/‘ +*4/(=‘ 2(" (/J/ ‘ 4=‘ +‘ " (2=/1<4 2 ‘‘ &2(‘ 49+4‘ 2&&/ ‘ 1/ ‘ /ƒ ** + ; =‘ & ‘ /) ‘ D‘ ‘

GAM‘ 2‘ &‘ 49/(/‘ +(/‘ =/J/(+*‘ &/*2 ‘ /=‘ 1(/+4/ :‘ 3#‘ =4+4<4/ ‘ 4‘ =‘ ‘2‘ 236/14 2 ‘‘ 42‘ + ‘‘ ‘ : 14 ; / ‘ 4‘ &2(‘ 2 ‘ / ‘ 49+4‘ 49/‘ /J : / ‘ 1/‘ " (2J/=‘ + ‘ 249/(‘ +*=2 ‘ / 49/(‘ ‘‘ /) ‘ &‘ / ‘ (#‘ ‘2(‘ /) ‘ &‘ 2(42 ‘ ‘ : 7+=‘ 49 =‘ " 2 ‘ 4‘ ‘ 24 1/ : ‘ ‘ ‘ ‘ &x

b @ A?' GF@ F@C' F@' A?B A?' A E' I@' BZ' = ?@E% FR' IZ@ ' A1' F@' F=C>@' J =E@' I ' C ?>@C' =>= ? ' F@' DCA @ AC' ?A ' AJ ?>' G F ?' F@' @CJ ' A1' F@' .' ,' 9' @A ' :% ' - % ' 9' ,' % AC' ' 3 @ !' % 9.% ' :' ,' --% F@' Z E>@ ' FA >F ' @' A?B A?' >AAE% = ' F@' DC A?@C ' ? @?E@E' A' >@ ' F@' JA?@ ' I ' F@' B A @? @' A1' F@' = = % = ' G@ ' = ' I ' F@' F=C>@% GF F' GA E' I@' =' AJ JA?' =G' CAII@C ' ?E' F@ ' EA I @E' GF@ F@C' - 2 ' = "' ' NJd G= ' C >F ' E@ E@E' A?' F@' >CA ?E' A?' GF F' 'G= ' E@ E@E% B K % F= ' 'G= ' ?A ' CAII@C ' A' AI = ?' JA?@ ' I ! FC@= ' A1' =' F=C>@' A1' AEAJ % 1 3

F@' 1 C ' A ? 4' 1C= J @E' A?' F@' ' 3 @ ' ' 9.% ' :% F=C>@E' F= ' F@' DC A?@C' FC@= @?@E' A' = @' F@' DCA @ AC' A1' F=B ?>' = @ J D @E' '' AJ J 'G F' F J' =?' =I A J ?=I @' C J@% =?E' F@C@I ' @] AC @E' =' AB@C@ >?% , ' F@' @ A?E' A ? ' F=C>@E' F@' DC A?@C' G F' CAII@C ' ?L F@4 AJ JA?' 1ACJ ' F@' F CE' A ? % 1C= J @E' A?' @ '.% A1' F@' ' 3 @ ' ' 9.% F=C>@E' F@' DC A?@C' G F' E@J =?E ?>' JA?@ ' A1' F@' DCA @ AC' G F' J @?= @ ' F@' DCA @ AC' = @E' F= ' F@' G= ' ?E @E' A' J @@ ' F@' DC A?@C% I ' F ' @ ?>' F J' F= ' 1' F@' E E' ?A ' F@' GA E' C @ ' ' = ' A?>' = ' F@' B@E' ;' GF@?' ' =G' F J' F@' = E% !' !& = <' F ' G = ;H '1A AG@E' F J % =?E' =1 @C' G@' >A ' ? A' C= F@C' =' A?@ ' D = @% F@' = E% 7 =?' A ' ?A ' @?E' J @' AJ@' JA?@ 'V% ' = E% 7) A ' F=B@' ?A' = J' A?' J @% ' =??A ' EA' A% A ' =?' F=B@' ?A' JA?@ ' 1CA J' J @;H F@' F@?' = E% 7 ' = J ' ?AG' >A C'>' A' = ' AJ @ F ?>' A1' B@C ' >C@= ' J DAC =? @' A' A % =?E' ' ' ?A' @' A C' = ?>' A '1AC' F@ D% AC' > B ?>' J @' ? A' F@' F=?E ' A1' F@' DA @% 1AC' 1' A ' EA% C@ J @ J I@C% ' = J ' =C J @E% =?E' 1' A ' EA% I ' AE' Ó ' G ' F=Bq' J 'C@B@?>@' ;' =?E' 1' A ' EA' ?A ' = ' J @' ' G ' = ' A ' AA<' ?E@ @?' I@C @ ' G F' J @' AJ @' J @' =>A H @' G= ' @] @@E ?> ' @] @E' GF @' = ?>' F ;' F@' FC@G' F ' =C J ' =I A ' =?E' @E' B A @?' >@ = A?;' ' FA >F ' F@' G= ' >A ?>' A' = = <' J @% ' G= ' =' A?@ ' DA ;' 'G= ' A' AJ D @ @ ' D=C= @E' =?E' AB@CT AJ @' ' =C @ ' <?@G' GF= ' ' G= ' = I A ;' 'G= ' ?E @E% ?' A? @T b @? @' A1' F= ' FC@= % A' > B@' F J ' AJ @' JA?@ ' A?' F@' DA ' F@' DCA @ AC' =EE@E% F= ' F@' >=B@ ' F J ' F@' JA?@ ' I A F' 1CA J' 1@=C' A1' D@C A?= ' B A @? @% =?E' 1CA J ' F@' = = <' A?' F ' F=C= @C ' AC' F@' DC A?@C' ' G= ' A? @?E@E' F= ' F@' @B E@? @' E E' ?A !' DDAC ' F@' 1 C ' A ? % = ' F@' GACE ' @E' E E' ?A ' ?@ @ =C ' J DAC ' =?' ? @?T A?' A' = @' A1' =?' = @ J D ' A' AJ J ' F@' GFA @' =D = ' C J @' F= ' G F' C@ D@ ' A' F@' @ A?E' A ? % F@' F=C>@' A1' CAII@C ' G!= ' ?A ' = ?=I @% = ' ? @' F@' ' 3 @ ' ' 9.% F@' F=C>@' A1' CAII@C ' G= ' A? ' = ?=I @' I ' F@G ?>' F= ' F@' JA?@ ' G= ' AI = ?@E' I ' = = ' 1AC @% AC' F@' 1@=C' A1' D@C A?= ' B A @? @' & F' C@>=CE' A' F@' F CE' A ? % ' G= ' ?A ' DDAC @E% = ' F@' DCAA1' G= ' A1' =?A F@C' A11@? @% ?= J @ % F@' = = ' AI = ? ?>' A1' F@' JA?@ ' G F' FC@= ' F@' (@ ACE@C' ?' J J ?>' D' = E% 7 F@C@' ' F ' E ? A?' I@ G@@?' F@' DC@ @?' = @' =?E' F@' .' ,' 9' @A ' :% ' - % F= ' ?' F@' = @C' F@' GACE ' =C@' [' 1' =? ' D@C A?' F= ' = @%n , ' ['@B@C ' F' A11@?E@C' F= ' I@' E@@ J @E' > 'A1' "4 : : "' (P GF@C@= ' ?' F@' 1AC J @C' F@' GACE ' =C@' [' F= ' I@' > 'A1' * 4 ']' F@C@' =C@' = A' ?' F@' DC@ @?' = @' @D=C= @' DCAB A?' 1AC' F@' D ? F J @?' A1' CAII@C % =?E' = A' =' DCAB A?' 1AC' E@ J =?E ?>' DCAD@C ' G F' J @?= @ ' F@' E 11@C@? @' % F= ' ?' F@' DC@ @?' = @' F@' A11@? @' '?A ' = @C @E' A' I@' CAII@C ' I 'A? '1@ A? % =?E' ' J = ' I@' = ' F@' @> = C@

R B' *5 ' R B' 2)' (' 4(')/(' G ' ' ' 'GY

3 ' C

9/(/' ;2'/# =' 234+ ''/:' 3# +'# 2& 49/' 49(/+4=' '' 49/' ;' /4' 1' ED' =' I ' 4' 9+=' 3// '' 12'P = :/(/:' 49+4' 49/' '' : 14 ; / '4 '' -4 3/' 2 '' 9+4' =/14 2 '? 5 79/(/' 49/' ;2'/# =' 234+ ''/:' 3# 249/(' 49(/+4=

? @?E@Eʻ Aʻ = ℀ [& 'G ʻ= AG ʻ F@ʻ =Gʻ Aʻ C@ J = ?ʻ = ʻ ʻ ʻ A?ʻ F@ʻ = @ ʻ E@ E@E℀ = ʻ Aʻ F@ʻ C J@ʻ A1ʻ CA I I@C ʻ ; I ʻ G@ʻ G ʻ ?A ʻ = AG ʻ A1ʻ =ʻ A? C B@ʻ CA I I@C ʻ 1 C F@C ʻ F=?ʻ F= ℀ F ʻ G ʻ DCAB E@ʻ 1AC ʻ I ʻ F@ʻ DCAB A? ʻ A1ʻ F ʻ n ʻ F@ʻ = @ʻ ʻ?A ʻ B@ ʻ @=C ʻ ; ʻ F= ʻ F@C@1AC@ʻ =<@ʻ A C3 D ? A?ʻ = ʻ Aʻ F@ʻ J = @C ʻ A1ʻ 1= ʻ DA?ʻ @= Fʻ A1ʻ F@ʻ @D=C= @ʻ F=C>@ ʻ & Fʻ C@ D@ ʻ Aʻ F@ʻ 1 C ʻ A ? ℀ ʻ = J ʻ A1ʻ AD ? A?ʻ F= ʻ F@ʻ FC@= ʻ ' ʻ I@ʻ Aʻ = @ʻ ℳ ʻ =?ʻ = @ J D ʻ Aʻ A J J ʻ F@ʻ A J D @ @ʻ =D = ʻ A11@? @ʻ ; =?Eʻ A ʻ G ʻ = ʻ DA?ʻ F@ʻ @B E@? @℀ G F@ F@C ʻ Fʻ =ʻ FC@= ʻ F= ʻ ACʻ F= ʻ ?A ʻ I@@?ʻ DCAB@E ʻ ʻ Aʻ F@ʻ @ A?Eʻ A ? ℀ F@ʻ b @ A?ʻ ℀ G F@ F@Cʻ F@ DCA @ ACʻ D=C @Eʻ G Fʻ F ʻ J A?@ ʻ ?E@Cʻ I AE ʻ 1@=C℀ Fʻ = ʻ GA E4ʻ AD@C= @ʻ DA?ʻ =ʻ J =?ʻ A1ʻ1 C J ʻ J ?Eʻ ; =?Eʻ 1ʻ A ʻ F= ʻ I@ʻ A1ʻ AD ? A?ʻ F= ʻ F@ʻ DCAD@C ʻ G= ʻ D=C @Eʻ G Fʻ 1CA J ʻ F@ʻ ?1 @? @ʻ A?ZA ? ʻ A1ʻ F@ʻ B A @? @ʻ A11@C@Eʻ =?Eʻ F@ʻ B=> @ʻ FC@= ʻ A1ʻ =?ʻ ?E@1 ?@ 1ʻ F= !>@℀ F@ʻ C J @ʻ A1ʻ CA I I@C ʻ G ʻ ?ʻ J ʻ AD ? A?ʻ F=B@ʻ I@@?ʻ J =E@ʻ A ʻ ʻ ?ʻ ACE@Cʻ Aʻ A?T @ʻ CA I I@C ʻ ?ʻ F@ʻ =I @? @ʻ A1ʻ = = ʻ 1AC @℀ ʻ ʻ?@ @ =C ʻ F= ʻ F@ʻ D=C ʻ FA Eʻ I@ʻ D ʻ ?ʻ = = ʻ I AE ʻ1@=C℀ I ʻ ʻ F= ʻ?A ʻ F ?<ʻ ʻ F@ʻ @ ʻ I AE ʻ 1@=Cʻ I@ = @ʻ ʻ G= ʻ DCAE @Eʻ I ʻ GAʻ =E@b = @ʻ =1 @ ℀ @= Fʻ A1ʻ F@ J ʻ 1 @?ʻ ?ʻ @ 1ʻ Aʻ DCAE @ʻ F@ʻ @11@ ʻ 1ʻ F@C@ʻ G= ʻ B A @? @ʻ @?A >Fʻ Aʻ DCAE @ʻ I AE ʻ1@=C℀ ʻ G ʻ< "4< ʻ I@C ʻ ; =?Eʻ ʻ EAʻ ?A ʻ F ?<ʻ ʻ F@ʻ @ ʻ=ʻ CA I I@C ℀ I@ = @ʻ ?ʻ= E A?ʻ Aʻ F@ʻ B A @? @ʻ F@C@ʻ G= ʻ =ʻ FC@= ʻ Aʻ = @ʻ F@?℀ G Fʻ C@ D@ ʻ Aʻ F@ʻ F CEʻ A ? ℀ ʻ F= ʻ FA Eʻ F= ℀ 1ʻ J @?= @ ʻ G@C@ʻ @Eʻ Aʻ A I = ?ʻ J A?@ ℀ F= ʻ A ? ʻ ʻ = ?@E℀ = FA >Fʻ F@ʻ J A?@ ʻ G= ʻ = = ʻ @I = ?@E ℍ F@ʻ Z C ʻ 1A ?Eʻ F@ʻ DC A?@Cʻ > ʻ A?ʻ F@ʻ GAʻ = ʻ A ? ʻ A? ℀ I ʻ F@ʻ G= ʻ =1 @CG=CE ʻ @? @? @Eʻ A? ;F@ʻ @ A?Eʻ A ?ʻ A? ℀ NAd

'& &

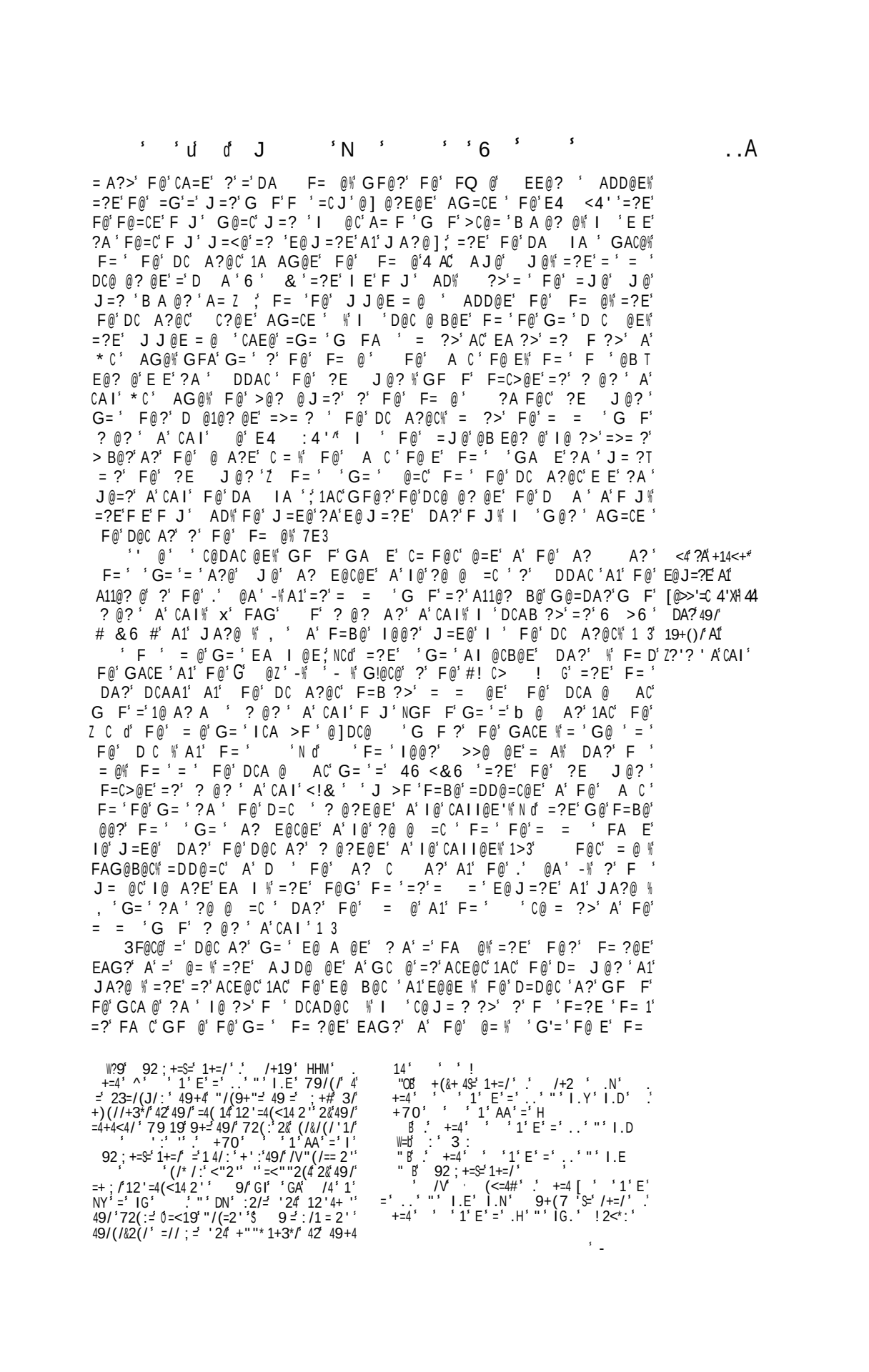
J ʻN ʻ ʻ ʻ6

9ʻ +==+<*4 < <=4 9+Jʻ 3//ʻ' ; + : ʻ <"2'' 49ʻ "/(=2'' '4/' : / :ʻ 42ʻ 3ʻ (233/ : ʻ <' : /(ʻ 49ʻ D ! /2ʻ Gʻ 1ʻ G.

A J @ʻ A1ʻ F@ʻ = @ ʻ DA?ʻ F@ʻ 1AC J @Cʻ ʻ G Fʻ C@1@C@? @ʻ Aʻ = = ʻ G Fʻ ? @? ʻ Aʻ CA I℀ J=vℍ I@ʻ F@C@ʻ DCAD@C ʻ ? CAE @Eʻ DA?ʻ F@ʻ .ʻ @Aʻ -℀ ʻ - ℀ ʻ G= ʻ E@ E@E℀ F= ʻ F@ʻ = = ʻ F@C@ ?ʻ E@ C I@Eʻ J ʻ I@ʻ J =E@ʻ DA?ʻ F@ʻ D@C A?ʻ ? @?E@Eʻ Aʻ I@ʻ CA I I@Eʻ F@ʻ DC A?@Cʻ G= ʻ ?E @Eʻ 1ACʻ = = ?>ʻ A?@ʻ ʻ AG@ʻ G Fʻ =?ʻ A11@? B@ʻ G@=DA?ʻ G Fʻ ? @? ʻ Aʻ CA Iʻ F J ʻ * Cʻ AG@Hʻ @B E@? @ʻ G!= ℀ F= ʻ I@ G@@?ʻ @?ʻ =?Eʻ @ @B@?ʻ AH A <ʻ = ʻ ? >F ʻ F@ʻ G= ʻ C=B@ ?>

WMdʻ /)ʻ . 2(42'ʻ Eʻ ʻ ʻ ʻ YD.ʻ 9ʻ /"2(4/(= =4+4ʻ '' +ʻ '24ʻ 49+4 49ʻ /12(:/(; /'4 2'/ :ʻ 49ʻ 1+=ʻ 42 +(0/' ʻ +' :ʻ 049+4 49/# 7/(ʻ 3249ʻ 2 2" ' 2 '' 49+4 '' 492=ʻ 1+=/= 79/(ʻ ; 2'/# 7+= 23P 4+ ''/ :ʻ 3# +'# 2 49ʻ 49(/+4= ="/1 & / :ʻ '' 49ʻ =4+4<4/ʻ 49ʻ ' : 14 ; / '4 ; <=4 92 <"2 '' &*(ʻ =4+4<4ʻ +' :ʻ '24 &2((233/(#? 3<4 79/(ʻ 49ʻ ; 2'/# 7+= 234+ ''/ :ʻ 3# 49(/+4= 42 +11<=/ʻ 249/(49+ '' 492=ʻ 79 19 +(ʻ ="/1 & / :ʻ '' 49ʻ =4+4<4/ʻ 49ʻ ' : 14P ; / '4 ;)94 3ʻ &2((233/(#ʻ &'49ʻ "+(4# 7+= "<4] ʻ &/+(ʻ +' :ʻ "+(4/ :ʻ 7 49 9 = "(2"/(4# '' 12'=/T</'1/ʻ 9ʻ/& ' : ')'2 '' 49ʻ =/12' :ʻ 12<'4 7+= 9/*:ʻ)22 : ' ' : / / :ʻ 4ʻ =/ / ; = =<=4+ '+3*/ʻ 2 '' 47 2)(2<' := ?

& (=4 49+4 49/(ʻ 7+= J 2*/'1ʻ /'2<)9 7 492<4 +'# 49(/+4 +4 +*# 42 "<4 4*2 "+(4# '' &/+(ℍ +' :ʻ =/12' :*#ʻ 49+4 49ʻ 49(/+4 42 +11<=ʻ 7+= '24 2'ʻ 2& 492=ʻ ; / '4 2'/ :ʻ '' 49ʻ 14 +' :ʻ 49/(/&2(ʻ 4 ;)94 "(2"/(*# 3ʻ 4+0/'' '42 12'= : /(+P 4 2'' += 12 2"/(+4 ')' 7 49 49ʻ J 2*/'1ʻ '' "(2 :<1 ')' 49/ʻ 32 : *# &/+(' 79 19 '' 49ʻ +3=/'1ʻ 2& &2(1ʻ = ''1/==+(# 42 12'=4 4<4ʻ (233/(# $ 9 = 1+=ʻ 7+= 3/&2(ʻ /) ' &ʻ 4(')/(' :" B +' :ʻ 49ʻ 2" ' 2'= '' 49 = '24ʻ += 42 49ʻ &2(; ʻ 2& ' : 14 ; / '4+(ʻ 49/(/&2(ʻ / '4 4*/ :ʻ 42 *//== 7/)94 ''+ : : P 4 2'' 42 49/ (' 3/ ') ' ; /(/*# /V4(+ 6<: 1 +* += 49ʻ 12<'4 &2((233/(# 7+= 1*/+(*# "(2J/ :



F ‘G= ‘?A ‘=?‘= = ‘G F‘ ? @? ‘ A‘CAI‘G F ?‘ F@‘ .‘ ,‘9‘ @A‘:‘ ‘- ‘ ‘ 753

9/‘ ‘4/‘4 42‘(23 =‘+‘ ; +4/(+‘ "+U‘ 2‘49/‘ 2& /T- ‘ +‘ .‘ =92<*:‘ [9/‘ "(2"/(*# +**/) / :‘ ‘ 49/‘ ‘ : 14 ; / ‘4

?‘=‘ = @‘ DA?‘ F@!.‘ @A‘ -‘ ‘ - ‘ GF@C@‘ F@‘ ?E J@?‘ = @E‘ F@‘= = ‘ A‘F=B@‘ I@@?‘=E@‘ G F‘=‘ GAAE@?‘ <‘ G F‘ ? @?‘ F@‘ >AAE ‘ JA?@ ‘ , ‘ J‘ F@‘ DCA @ AC‘ 71CAJ‘F ‘ D@C A?‘ =?E‘ =>= ? ‘ F ‘G ‘1@ A? A ‘ A‘ 6 ‘ =<@‘ =?E‘ =CC ‘ =G= ‘ G= ‘ FA E@?‘ A‘ I@‘ I=E‘=‘ ‘ E E‘ ?A ‘ A? = ?‘=‘ = @ Z @?‘A1‘1AC @‘ =?E‘ B A @? @‘ ; I ‘=‘?@G‘ ?E J@?‘G= ‘DC@1@CC@E‘=>= ? ‘F J‘ = ?>‘ F@‘= = ‘= ‘ I@1AC@‘ I ‘ = ?>‘ F@‘ ? @?‘ A‘ I@‘ F@‘ JA?@ ‘A1‘ F@‘DCA @ AC‘1CAJ‘F ‘D@C A?‘=?E‘=>= ? ‘F ‘G ‘1@ A? A ‘=?E‘ !4 ‘ A‘ @= ‘ =<@‘ =?E‘ =CC ‘ =G= $‘ DAF‘ GZ F‘ F@‘ G= ‘ A?B @E‘ N=$d

2‘J 14 2‘‘ 2‘ +‘‘+==+<*‘ 7 43‘ ‘4/‘‘4 42‘ (23‘2‘‘+‘‘ ‘ : 14 ; / ‘4 &2(‘ (233/(#

‘ F@‘ :‘ ,‘ 8‘ 3 @ ‘ ‘ ‘ ‘ GF@C@‘ z @‘ @B E@? @‘1= @E‘ A‘ DCAB@‘ =‘CAII@C ‘ F@‘Z C ‘G@C@‘@JDAG@C@E‘ A‘ A?B ‘A1‘=?‘= = ‘ G F‘ ? @?‘ A‘ CAI‘ =?E‘ A‘ F@ ‘ =C@‘ I ‘ @ ‘ : ‘ A1‘ F@‘ ?@G‘ ‘ GF F‘ ‘ =<@?‘1CAJ‘ F@‘1ACJ@C‘ ‘ A?‘ GF F‘ F@‘1A AG ?>‘ = @‘ G= ‘E@ E@E

9/(‘49/‘ 6<(#‘12‘J 14‘ 2‘+‘‘+==+<*‘ K749‘ ‘4/‘‘4 42‘ (23‘2‘‘+‘‘ ‘ : 14 ; / ‘4 &2(‘ +‘‘+))(+J+4/ :‘ (233/(#‘49/‘ =/‘4/‘‘1/‘ ; +# 3/‘ &2(‘+9‘ +==+<*‘7 49‘ ‘4/‘‘4 42‘ 12 ; ; ‘4 =<19‘ +))(+J+4/ :‘ (233/(#

?‘ ?E J@?‘ = @E‘ F=‘ F@‘ DC A?@C ‘ A?‘ ‘ ‘1@ A? A ‘ A>@ F@C‘ J=E@‘=?‘= = ‘=?E‘F J‘ ?‘ IAE ‘1@=C‘ A>@ F@C‘1@ A? A ‘ E E‘D ‘=?E‘ @C = ?‘ JA?@ ‘1CAJ‘F ‘ D@C A?‘ A>@ F@C‘1@ NZZ ‘ ‘ =?E‘ B A @? ‘ E E‘ @= ‘ F@‘ = =‘ CAII@C ‘ A1‘ F@‘ JA?@ ‘ G= ‘ ?A ‘DCAB@E‘ ?‘ A? @b @? @‘ A1‘ F@‘=I @? @‘ A1‘ F@‘DCA @ AC‘ I ‘ F@‘DC A?@C ‘G@C@‘ A?B @E‘A?‘ F@‘ @=C@ ‘@B E@b@@‘A1‘1@ A? A ‘ = = ?>‘ F@‘ DCA @ AC‘ G F‘ ? @? ‘ A‘CAI‘F J‘ =?E‘ F@‘ Z C ‘ 1A ?E‘ F=‘ F ‘ 1@ A? A ‘= = ‘G=‘ AJJ @E‘I ‘ F@‘ DC A?@C ‘ A>@ F@C‘ =?E‘ DA?‘=‘ = @‘C@ @CB@E‘A?‘ F@‘ZZ @ A? ‘ ‘ ‘ F@‘ :‘ ,‘ 8‘ 3 @ ‘ ‘ ‘ ‘ ‘ A‘ I@‘ A? C @E‘ @C= ‘ =?E‘ 1‘ A‘ GF@ F@C‘ F@‘D ? FJ@?‘J ‘?A ‘I@‘ ?E@C‘ F@‘ F‘=?E‘ F‘ @ ‘ A1‘ ‘ 3 @ ‘ ‘ 9.‘ A?1 ?@E‘ A‘ FC@@‘ @=C ‘ JDC A?J@?‘V AC‘-?E‘ ‘ F@‘ C @‘ J@=? ?>‘ A1‘ F@‘ :‘ ,‘ 8‘ 3 @ ‘ F= ‘ ?‘=? ‘ ?E J@?‘1AC‘ CAII@C ‘ 1‘ F@‘ CAII@C ‘ I@‘ JD @‘ F@C@‘ ‘ ? E@E‘= A‘=‘ JD @‘ 1@ A? A ‘= = ‘G F‘ ? @? ‘ A‘CAI‘; =?E‘ 1‘ F@‘ CAII@C ‘ I@‘=>>C=T B= @E‘=‘ J =C‘ =>>C=B= @E‘ 1@ A? A ‘= = ‘G F‘ ? @? ‘ A‘ CAI‘ =?E‘ F@?‘ GF@ F@C‘ = ‘ F@‘ Z C ‘ F=B@‘ 1A ?E‘ F‘ =?‘ =>>C=B= @E‘ = = ‘ F@‘ D ? FJ@?‘J= ‘?A ‘I@‘ ?E@C‘ @ ‘ ‘ ,‘ ‘ A1‘ F@‘ ‘ 3 @ ‘ ‘ 9.‘ @] @?E@E‘ A‘ C=? DAC = A?‘1AC‘ 1@‘V ‘G= ‘F@ E‘ F= ‘ F@‘ = @C‘G= ‘ F@‘ ACC@ ‘B @G‘ & F@C@‘ F@‘CAII@C ‘ ‘ F=C>@E‘= ‘ =‘ JD @‘CAII@C ‘ F@‘ Z C ‘ J= ‘1?E‘ F= ‘ F@‘ DC A?@C‘ AJJ @E‘ =‘ JD @‘= = ‘ G F‘ @?‘ A‘ CAI‘; ‘I ‘ GF@C@‘ =?‘ =>>C=B= @E‘ CAII@C ‘ ‘ F=C>@E‘ F@‘ Z C ‘ J= ‘1?E‘=?‘=>>C=B= @E‘ = = ‘ 1‘ F@‘Z C ‘1?E‘ F= ‘ F@‘DC A?@C‘ AJJ @E‘ F‘=>>C=B= @E‘= = ‘ F@?‘F@‘ ‘ =I @‘ A‘ C=? DAC = A?‘1'3

5C A?@C ‘G@C@‘ ?E @E‘1AC‘1@ A? A ‘= = ?>‘ F@‘DCA @ AC‘ G F‘ ? @? ‘ A‘CAI‘F J ‘ F@‘Z C ‘1A ?E‘ F@J‘> ‘A1‘=?‘= = ‘ I ‘?@>= B@E‘ F@‘ ? @? ‘ F=C>@E‘ @ E‘ F= ‘ F@‘DC A?@C ‘ A E‘ ?A ‘ DA?‘ F ‘ ?E J@?‘ =?E‘1?E ?>‘ I@‘ A?B @E‘A1‘=‘ AJJA?‘ = = ‘ Nqd

W7‘ /V‘ ‘ *7+(:=‘ Y‘ ‘ ‘ ‘HG.‘ 2=+‘T</‘4 +‘ ‘ +44/=2‘‘ = "0‘ 2‘4/49‘=‘ 1+=/‘ G /+19‘DMG‘ . +=4‘ ‘ ‘ 1‘ E‘ =‘ .G‘ "‘ IGM‘IG.‘ /V‘ ‘ &‘ ; +‘4‘ -‘ ‘ ‘ .YN‘ G /+19‘AEH‘ .‘ =G<‘ 5‘ ‘1‘YA[‘=‘E ‘ /-‘ ‘ 419/**‘ G /‘ ‘ ‘ IYE‘ 9 =‘ :/1 = 2‘‘ (/‘ :/(=‘ 4‘T< 4/‘<‘

‘/1/= =+(# 42‘ +*4/(‘ 49/‘ &2(; =‘ 2‘ ‘ : 14P ; / ‘4 h+=‘ ‘ : // :‘ 49/‘ 2<(‘4 =+ :‘ 9# +**/) ‘)‘+‘‘+==+<*‘7 49‘ ‘4/‘‘4 42‘12 ; ; ‘4 4* /‘ (233/(# +**/)/ :‘ /‘ 49/‘ ‘24/‘ /+(=‘ ‘ ‘ .N‘ "V‘ ‘4‘ 22:9+**‘ .G 2V‘ ‘ ‘GIM‘ /‘ ; +‘‘—

<4 4 =// ; = 49+4 '* +** 1+=/ 49 " (=2 ' /(= =92<* :' 3 =4+4/ :' 42 3 0 42hY\49/(-S D@C A? ' F=E' I@@?' 1 'Z ?E' = ' F@' W =C @C' @ A? =?E' F=E' I@@?' C=? J @E' A' F@' K@ * = @ EA I @E' GF@ F@C' F@' ?E T J @? ?' ACEDC' A' @] @' F@' Z C E A?' A1' F@' @ A? '1! ' I ' G=CC=? ?> C=? DAC = A Z 1AC' 1@' ?E@C' F@' ' 3 @ ' ' 9 ' 9d A >F ' ?A ' ' F=B@' F=E' F@' GACE' 7 A>@ F@CH ?' =?E' = E 7 ' FA E' F=B@' 1FA >F ' F= ' G= ' ?@ @ =C 1' ' F=E' ?A ' I@@?' 1AC' F@' E J' A1' J ' ICA F@C' 5= @ W Z8 ' =11@ H' 6 G 1E3' DDA ?>' F= ' ' I@' A F@?' F ' GA E' I@' =' >AAE' ?E J @? H 1 3

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' W - b %O /) ' &+ ; = : / ' ' 2V ' ' M ' HD ' +<*/ ' ' + : : / : ' 0 9 " (=2 ' / (=' +(/ ' 27 ' 12 ' J 14/ : ' + ' : ' &' + ' #49 ') ' ' (2(/ ' =' 42' 3 : 2 ' / ' <"2 '' 4 ' ' =9+** 12 ' = : / (' 79+4 =' 49/ ' 3/=4 12+(=/ 42' 4+0/ ' $ 9 " (=2 ' / (=' 7 /(/ 49/ '' =/ ' 4/ ' 1/ :' 42' & &4// '' + ' ; ' 4/ '' #/+(=$ 4(+ '="2(4+4 2 ' (/="/14 J/*# ' +"(/J 2<=12 ' ' J 14 2 '' 9+J ') ' 3// '' "(2J/ :' +) + ' =4 49/ ' 2 ' / =/ ' 4/ ' 1/ :' 42' 49/ ' 9)9/("< ' =9 ; / ' 4 ' 4 : 2/=' '24 ' 49/(/&2(/ ' +"")/+(4 2' 9/ ' 1*/+(4 49+4 +<*/ ' ' : :' 92* :' 49+4 49/ ' 72(:' 042P)/49/($ 7+=' /==/ ' 4 +* '' +** 1+=/=' 492<)9 49/ ' ; +() ' +* ' 24/ ' =4+4/=' 49+4 9/ ' : ' ' <4 4 =' 1/(4+ '* " (< : / ' 4 '' +** 1+=/=' 42' '=/(4 466/ 72(:' 042)/49/($ +=' 4 =' '' 49/ ' =4+4<4/ ' +' :' ; +# ; "2(4 +')(/+4/("(2V ; 4# 49+'' =' '/1/==+(# 42' 12 ' =4 4<4/ +' "(' 1 "+* '' 49/ ' =/12 ' :' : /)(// ' // 49/ ' 1+=/=' :" ' . Y ' ' ' ! " B C +*/ ' AHA ' AHY ' G +=4 ' ' 1 .Y ' =' . YE ' " ' DEI ' DEA W=B <(' /(S=' 1+=/ ' :' /+19 ' AHY W$B /) ' +**27=' G 2V ' ' ' YH /) ' <: 10 ' E ' ' ' GHD ' 9/ 6<(# 7 /(/ : =19+()/ :' +=' 42' 49 =' ' P : 14 ; / ' 4 ' +' :' +' / 7 ' : 14 ; / ' 4 " (/&/((/ : ' *+# ')' 49/ " (2"/(4# '' ' ' 2 ' / 12<' 4 ' + ' :' '' ' ; ' + ' 249/ (' + ' :' 49/ " (=2 ' / (= 7 /(/ 12 ' J 14/ :' <"2 '' 4 ' 9/(/ =// ; =' 42' 9/ +' : =4 ' 14 2 '' '' =<19 ' 1+=/=' 79/(/ 49/ ; 2 ' /# =' =42*/ '' &(2 ; ' 49/ =/(J+ ' 4 ' + ' :' 79/(/ 4 =' / ; 3/aa*/ :' 3# 9 ; ' // ' 5 ' 8N ' ' > ' 19 ' V ' = $M ' + ' :' D 5 ' 5 ' & ' + ' :' 4* / " (2"/(4# '' 49 =' 1+=/ =// ; =' 42' 9+J/ ' 3// '' 7 /** *+ :' '' 49/ ' ; +=4/(' ' !

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F@' E@1 ? A?' A1' F@' A11@? @' A1' =C @? ' ' F ' > B@?' I ' =?' / *' 4 2 '' 2 ' =? @?' GC @C ' % 7 C J ' @ % @ ?E J ' @>@ % A? C= = A' C@ ' *+(1/ '# = @? ' 1C= E @? =% J' =? J A' 1 C=?E % ?B A' A' EA J ?A' Z ' C@ ' =' 1 @C ' J' =? J A' E A% b =' ?@' =? J A' 1 C=?E ' ?A?' A J J C H 1<3$' @' I @b @?' E@1 ? A? % F@' =< ?>' A1' F@' DCAD@C ' F= ' I@@?' = @E' A' I@' 71@ A? A ';'H N d GF F' @]DC@ A?' F= ' I@@?' C@?E@C@E' = ' >? 1 ?>' =' =< ?>' 6 !& 4'*>"6 #! ' AC% = ' F@' B ' =G' @]DC@ @ ' % > &' 6> L ' 1#3' ?' =' GAC<' A1' >C@= ' @=C?T ?>' =?E' C@ @=C F% =C @? ' ' E@1 ?@E' = ' =C>@' A' I@' 7 F@' GCA?>1 ' AC' 1C= E @?' =< ?>' =?E' =CC ?>' =G= ' I ' =? ' D@C A?' A1' F@' J @C@' D@C A?= ' >AAE ' A1' =?A F@C% 1CA J ' =? ' D = @% G F' =' 1@ A? A ' ? @?' A' A?B@C ' F@ J ' A' F ' N F@' =<@CH d AG?' @% =?E' J =<@' F@ J ' F

" B 4' =' =4+4/ :' 3# + '' +3*/' 7(4/(2 '' 49/' (; '+# +7' 49+4' 49/' *+7' 2& *+(1/ '# =' <' ,'4/**) 9*/ ' +'# *+7#/(=' 7 ** +)(//' 7 49' 49 =' 2" ' 2' ' 9/' 1+=/=' (/P *+4 ')' 42' *+(1/ '# +(/' 12 '&* 14 ')' 4' =' <=/*/=-' 42' /' : /+J2<(' 42' (/12 '1 *' 49/ ; ' +'# 2& 49/ ; ' 7/(/' : /1 : /:' 79/ '')(+' :' *+(1/ '# 7+=' +' 1+" 4+# 2&&/ '1/ ' +' :' '' & ' & S :' 4' ; +# 3/' 49+4' =2 ; /P 4 ; /=' +' 1+=/' 7+=' 9/*:' ' 24' 42' 3/' *+(1/ '# 79/ '' & +' */=-' =/J/(/' "<' =9 ; / '4' 9+:' 3// '' ' &* 14/ :' &2(' 49/' 2&&/ '1/ ' 4' ;)94' 9+J/' 3// '' : /1 : /:' 249/(7 =/' '' ' ; 2(/' ; 2 : /('' 4 ; /=' 79/ '' *+(1/ '# 7+=' '2' *2 ') / (' +' 1+" 4+# 2&&/ '1/ ' 49/' *+7' ; +# 9+J/' 3// '' =4(+ ' / :' 49/' 249/(' 7 +# '' 2(: / (' 42' "(/P J/ ' 4' 49/' "(=2 ' / (' /=1+" ')' "< ' =9 ; / '4' +*42) /49/(' * 4' 9+(:' 1+=/=' ; +0/' 3+:' *+7 ' 9/' (/1/ '4' /+=/' 2& ' (' : :*/42 '' 9+=' & "2== 3*/ ' (/' : /(/ :' 49/' *+7' 2& *+(1/ '# ; 2(/' 12 '&<=/ :' 49+'' /J/(' L2<(' 2& 49/' 6< :) /=' 3/&2(/' 792 ; ' 49/' 1+=/' 7+=' 9/+(: ' : ==/ '4/ :' &(2 ; ' 49/' 6< :) ; / '4' +' :')+J/' J/(# &2(1 3*/' (/+=2 '=' &2(' =2' : 2 ') ' /1/ '4' /' +14 ; / '4=' 3# 79 19' 3+ */=' 2&)22 :=' ; +# 3/')< *4# 2& *+(1/ '# ' +' :' 3# 79 19' +' "/(=2 '' ' : 14/ :' &2(' 49/' ; =: / ; /+' /(' 2& 234+ ' ')')22 :=' 3# &+*=/' "(/4/ '1/=' =' '24' 42' 3/' +1T< 44/ :' &' 4' 3/' "(2J/ :' 49+4' 9/' 234+ ' / :' 49/' "(2"/(4# '' T</=4 2 '' '' +' '# =<19' ; +' ' /(' +=' 42' + ; 2< '4' '' *+7' 42' *+(1/ '# ' +' :' = ; *+(' / ' +14 ; / '4=' 9+J/' 3// '' 2& =/(J 1/' '' "(/J/ '4 ')' 2& * /' :/(=' /=1+" ')' "<' =9 ; / '4' <"2 '' 4/19 ' 1+* 236/14 2 '=' +' :' <"2 '' ' 1/' : =P 4 '14 2 '=' 79 19' 2<) 94' '24' 42' /V =4' '' 49/' (; '+# +7 W b' (+14 ' * 3 ' ' 1' HG' "' .AM' 2' ! *+' J *' '' 72(:=' '/+(*# = ; *+(' =+#=' 0 L<(4< ; ' /=4' 4(+14+(2' (/ ' +* /' +/' (+<: ' ' */ ' 4+' + ' ; 2' &<(+' : ' ' J 42' **2' 1+6<=' (/=' * +' &</(4 $!*+' J' * 3 ' V' 1' .H' ' :' =/' (4 ' 1' .A ' "' GG' L*/4 ' * 3 ' ' 1' HE' "' AI ' H' '=4' .MD W1b' H' '=4' ' .MD' .' +*/ ' AMH? . +70' ' ' 1' HH' I' *+2' 2 ; ' GGN " B I' *+2' 2 ; ' GHG' G' +=4' ' M '1' .Y' =' G' "' AAH' 1 4 ')' <=4' '=4' * 3' J' 4 4' . ' =' . ' 79 19' 4' =' 23=/(J/ : ' =// ; =' 42')2' &<(49/(' 49+'' 49/' 12 ; ' 2 '' *+7' '' 49/' &2** 27 ')' : /& ' 4 2' Q-<(4< ; ' /=4' 12 '4(+/+4+4 2' &(+<: <*2=+' *<1(' &+1 / ' : ' 1+<=& ' J/ * "= <=' (/ ' J/ * /4 + ; ' <=<=' /6<=' "2==1== 2 ' =J/

AG?' DCAD@C %' G FA ' F@' A? @? ' A1% F@' AG?@C H N@d ?E' ?' =' = @%' GF F' &= ' C@ @ 3 @E' 1AC' F@' A? E@C= A?' A1' F@' Z E>@ %' F@' @=C?@E' Z E>@' BFA' ' B C@E 4' F@ C' AD ? A?' = E%' F= ' @' C @' J @=? ?>' A1' =C @? ' ' ! F@' 1@ A? A ' =< ?>' F@' DCAD@C ' A1' '=?A F@C' G FA 'F ' A? @? %' =?E' =>= ? ' F 'G %' G F' ? @? ' A' A?B@C ' ' A' F@' @' A1' F@' =< 'H N Wd

& F'C@ Z1@@ ' A' =' =< ?>' > "!' 6> _' ' ' =>@E' F= ' DA?' F@' 'E@I= @' ?' =' = @' GF F' ?E@CG@? ' >C@= ' E A?%' A?@' A1' F@' @=C?@E' Z E>@ ' E@1 ?@E' =C @? ' = ' I @ ?>' 7 =' GCA?>1 ' =< ?>' A1' >AAE ' G F' ? @? ' A' DA ' F@' AG?@C' A1' F@ J %' > _' > "!'G' P F ' 1' F ' J A B@' I@' =' ?@ @ =C ' ?>C@E @? %' '=DD@=C ' ZC= ' ' ' ?A ' A?1 ?@E' A' F@' = b A?' A1' D@ ? =C ' =EB=? =>@%' AC' A' F@' =< ?>' A1' F@' F ?>' A @?' 1AC' F@' =<@' A1' 'GA ' F

b m 4 '14 2 '' 3/47 / / '') (+ ' :' +' :' "/4 4' e=C @? ' +32 =9/ :

AC J @C ' F@C@' G= ' =' E ? A?' A1' F ' A11@? @' ? A' >C=?E' =C @? ' =?E' D@ ' =C @? %' F@' A11@? @' I @ ?>' >C=?E' =C @? 'GF@?' F@' B= @' A1' F@' DCAD@C ' =<@?' G= ' =IAB@' G@ B@ D@? @%' =?E' D@ ' =C @? %' GF@?' F@' B= @' G= ' A? ' G@ B@ D@? @%' AC' ?E@C' F= ' J H 1 '3' 'I ' F@' - :' , '- 8' 3 ' %' '- %' 7 @B@C ' =C @? %' GF= T @B@C' I@' F@' B= @' A1' F@' DCAD@C ' A @?%' F= ' I@' E@@ J @E' A' F@' A1' F@' = J @' ?= C@%' =?E' F= ' I@' IZ@ ' A' F@' = J @' ? E@? R' ?' = ' C@ D@ ' = ' >C=?E' =C @? ' G= ' I @1AC@' F@' - ' E= ' A1' ?@%' 9- .' ; =?E' @B@C ' A C ' GFA @' DAG@C' = ' A' F@' C = ' A1' =C @? ' G= ' I@1AC@' F= ' J @' J @E' A' D @ Z' =C @? ' F= ' F=B@' DAG@C' A' C ' @B@C ' = @' A1' =C @? %' F@' D ? F J @? ' A1' GF F' =??A ' @] @@E' F@' D ? FT J @? ' F@C@ ?=1 @C' J @? A?@E' 1AC' J D @' = H @? %' =?E' = A' A' C ' = ' = @ AC @ ' A' F' = ! @? H %' R F ' F=D @C' G ' I@' A? E@C@E' ?' F@' 1A AG ?>' ACE@C' $ `

' F@' =< ?>' =?E' =CC ?>' =G= ' ?@ @ =C ' A' A? @' F@' A11@? @' A1' =C @? %' D' -8

' F@' =< ?>' J ' < B E! 4' #4 &! 4 ' D '

5 ' F@' =< ?>' I ' D@C A? ' F=B ?>' =' I=C@' F=C>@' AC' D@ = ' @' A1' F@' >AAE %' =?E' I ' I= @@ %' D '

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3 ' =< ?>%' , %' J ' I@' 6 !& 4' *>"6 #! ' D ' 8

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+ ' 1' F@' >AAE ' ?' C@ D@ ' A1' GF F' =C @? ' J = ' I@' AJT J @E%' D ' -

+ ' 1' F@' AG?@C F D' A1' F' >AAE %' D ' -

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W]b' G' +=4' ' ' 1' . Y' =' G' "' AAH' ' ' /) ' ' 2**27+#' .' / ' ' ' HDM' +(0/ ' ' =+ : ' 0 /(9+"=' 49 =' 7+=' 49/' '2 S' +11<(+4' : /& ' 4 2 '' ? 9<4' 4' ' / / : /:' =2 ; ' +: : 4 2 '' ? 49/' 4+0 ')' 92<*:' 3' '24' 2 '*#' 7 (2')&<*' +' :' &(+<: <*/ '4 ' 9<4

+*=2' Z' 7 492<4' + ' #' 12*2<(' 2&' ( ) 94 ' d $ <4' 4' = 1*/+(' 49+4' 49/' 0&/*2 ' 2<=' ' 4/ ' 4' $ /VP 1*<: /=' + #' 12*2<(' 2&' ( ) 94 W w b' #' ! (2=/ ' ' '' + ; ; 2 ' : S' 1+=/ ' G' /+19' . MEN W^b' 4+4 ' /=4 ' .' WH' : 7 ' . b ' 1 ' . A

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F@C@ J I@ =?'= = =< ?>'AC' @B@C=? @' A1' F@'>AAE '1CA J' F@' DA @ A?' A1' F@' AG?@C% A?' F@' >CA ?E' F= =C @? ? E@ =' C@ D= ' '1% F@C@1AC@% F@C@' I@' ?A' C@ D= ' ?' =< ?>'>AAE % F@C@' =?!I@'?A'1@ A? ' ?' =CC ?>' F@ J '=G= % NW d ' F@' =< ?>' ?@@E'?A'I@' I ' F@''Z@C 'F=?E' A1' F@'D=C '= @E'$ A' F= ' 1'=' F @1'1C= E @? 'DCA C@'='D@C A?' ??A @?'A1'=? ?1@ A? A ? @?' A' =<@' F@'>AAE '1AC' F J % N= ' 1'F@' FA E'DCA C@'=?' ?1=?'G F ?' F@' =>@' A1' E C@ A?' A' @= ' F@'>AAE d F ' A11@? @' G I@' F@' =J@' = ' 1'F@'F=E' =<@?' F@'>AAE ' F J @ 1;'=?E' ' FA E' I@' A' F=C>@E% 1!3

'=DD@=C ' A' I@' G@ ' @ @E' F= ' F@' 1@ A? ' @ ' ?' F@'B@C ' 1 C '=A'A1'C@JAB ?>' F@' DCAD@C $ =?E% F@C@1AC@% F= ' F@' @= ' C@JAB ?>'A1' F@' F ?>' =<@?' 1CAJ' F@' D = @' GF@C@' 'G= ' I@1AC@' G F'=?' ? @?' A' @= ' % ' ='' 11 @?' = DAC = A?% FA >F' ' I@' ?A'b @' = !C @E'=G= % 1*3' F % GF@C@' =' > @ 'GFA' F=E' =<@?' F@' F@@ '1CAJ'F ' I@E% G F'=?' ? @?' A' @= ' F@J % =?E' =CC @E' F@J' ? A' F@' F= % G= '=DDC@F@?E@E' I@1AC@' F@' FA @% ' G= ' FA :@?R F= ' F@' G= ' > ' A1' =C @? % 1 3' ?E' =' <@'E@ A?' G= ' J=E@% GF@?' =' D@C A?' GFA' F=E' =<@?' =' FAC @' ?' =' A @% G F'=?' ? @?' A' @= ' F J % G= '=DDC@F@?E@E' I@1AC@' F@' A E' >@ ' F J' A ' A1' F@' A @;' 1 3' =?E' = A% GF@C@' =' D@C A?' ? @?E ?>' A' @= 'D = @' AA<' 'A ' A1'=' C ?<' GF@C@ ?' ' F=E' I@@?' E@DA @E% =?E' = E' ' A?' F@' 1 AAC% I ' G= ' CDC @E' I@1AC@' F@' A E' =CC ' '=G= % NJd ?E' ?'=' J AC@' J AE@C?' = @' 'G= 'FA E@?' I '= ' F@'Z E>@ % F= ' F@' C@JAB= ' A1'=' D=C @ '1CAJ' F@' F@=E' A' F@' = 'A1'=' G=>>A?% G F'=?' ? @?' A' @= ' % ' G= ''=' 11 @?'= DDC ' = A?' A' A? @' =C @? % 1 3' 'GF@C@' F@' ?E J @?'=>= ? ' F@' DC A?@C' G= ' 1AC' @= ?>' =' GC=DD@C' =?E' 1A C' D @ @ ' A1' ?@?' A F' ;' =?E' F@' 1= ' G@C@' F= ' F@' D @ @ ' A1' ?@?' A F' G@C@' D= <@E' D' ?' F@' GC=DD@C' ?' F@' AJ JA?' 1AC' J'A1'=' A?>' b =C@% =?E' = E' @?> FG= ' ?' =' G=>>A?;' F= ' F@' DC A?@C' @ ' F@'D= <=>@' A?' A?@' @?E' ?' F@' G=>>A?' 1AC' F@' >C@= @C' A?B@? @? @' A1' =< ?>' F@' ?@?' A % =?E' ' F@' GC=DD@C' = ' F@' G= ' EAG?' 1AC' F= ' D CDA @';' I ' F= ' F@' G= ' E AB@C@E' =?E' =DDC@F@?E@E' I@1AC@' F@' F=E' =<@?' =? F ?>' A ' A1' ;' =?E' = ' F@' Z E>@ ' =>C@@E% DA?' =' = @' C@ @CB@E% F= ' ' E E' ?A ' =J A ?' A' =C @? % FA >F' F@' ? @? A?' A1' F@' DC A?@C' A' @= ' G= ' J =? 1@ ' F@ ' F@ E% F= ' A J @' C@JAB= ' A1' F@' >AAE ' 1CAJ' F@' D = @' GF@C@' F@ ' G@C@' G=

'#C@JA3 ' 2& 49/')22:=' 7 49' 49/' &/*2' 2<=' '4/'4' =' +' =<&& 1 /'4 1+((# ')' + (+#

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W b /*' GI' .' +7O' ' '1'HH'=' . +1' 3(' 4 4' ^ 5W b' G +=4' ' ' 1' .Y'='H' "' AAI
W b +*/' A.I' G +=4' ' ' 1' .Y ='H'"' AAA' 2' ''49/' 1(;/' 2& ;<(:/(' &' ' "(21<(/' ' +<' : 2' 2(*<' +4 1' 42' O *#' ' ' =')< *4#' 2& 49/' ;<(:/(' +=' "('1 "+*' +':' ' =' ;/((/*# +'' '=4(<P ;/'4' J :J2*' .' "' YIA

W b' H' '=4' .ME' .' +7O' ' '2'HH =' GA' +1' 3' 4 4' ^ 5"@B')' *+1' 2 ;' GH.' G' +=4' ' ' 1' .Y' =' I "' AAA
W b' H' *<=4(' .ME' .' +*/' AMD' AME "B' H' *<=4' .MN' ' B' ;=2'S=' 1+=/' /*' H. W'b' 2=*/4S=' 1+=/' .' /+19' GHY

?@ @ =C ' ; =?E' F@' D=C ' = @E' J %' 1AC' F@' ? =? ' = ' @= %'
F=B@' F@' @? C@' =?E' = ' A @' DA @ A?' A1' F@ J %' NAd' ' GF@C@ F@'
DC A?@C' F=E' 1 @E' =' F=>' 1CA J ' F@' I A A J ' A1' F@' I AA ' A1' =' A= F%' =?E' G= ' E@ @ ! ' a@1AC@' F@' >A ' ' A ' A1' F@' I AA ' ; =?E' '
E E' ?A ' =DD@=C' F= ' F@' I =>' G= ' @? C@ ' C@ J AB@E' 1CA J ' F@! D= @'
YGF F' ' = ' 1 C ' A Z?@E' ?' F@' I AA ' ; I ' F@' C= ?>' ' 1CA J ' F@'
I A A J ' F=E! A J D @ @ 'C@ J AB@E' @= F' D=C ' A1' ' 1CA? ' F@' D= @'
GF F' F= ' D@ 1 ' D=C ' A D @E'$ F@' Z E>@ ' F@ E%' DA?' =' = @'
C@ @CB@E%' F= ' F@C@' G= ' =' A J D @ @' = DAC =B ' NDd' & F@C@' F@'
DC A?@C' G@? ' ? A F@' =I @' A1' =?' ??%' =?E' D= ? ?>' A' = J =C@%'
= E' A' F@' A @C%' ! F= ' ' J ' FAC @%' =EE @' F J 4;H F@' A @C' E E'
A%' =?E' F@' DC A?@C' C @E' A' J A ? ' F@' J =C@' ?' F@' J ? =CE%' F '
1CA J ' F@' ?A @' J =E@' I ' A J @' J ' F@' J =C@' GA E' ?A ' =?E'
'$ F@' DC A?@C' F@?' E C@ @E' F@' A @C' 1 @=E' F@' J =C@' A ' A1'
F@' =CE' 1AC' F J ' A' J A ? '; F@' A @C' @E' Fp' J =C@' A %' I ' I@1AC@'
F@' DC A?@C' F=E' J @' A' J A ? ' F@C%' =' D@C A?' GFA' <?@G' F@' J =C@'
= J @' D%' =?E' F@' DC A?@C' G= ' @! C@E' ; ' G= ' F@ E' F= ' 1' F@'
DC A?@C' = @E' F@' J =C@' A' I @' @E' A ' A1' F@' =I @' ? @?E ?>' A'
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b @ A?' G= ' ?A ' C@ C?@E%' ?AC' E E' F@' DC A?@C' > B@' =? ' = A ?'
A1' ' F@' DC A?@C%' A?' I @ ?>' = <@E' GF ' F@' F=E' ?A ' E@ B@C@E' %'
= ' A? @' DCAE @E' ' 1CA J ' F ' C >F F=?E' CA @C ' DA <@ ' ; ' G= '
?AD@?@E' =?E' F@' A ?' =1@' G F ?' ' $ DA?' I @ ?>' = <@E' GF ' F@'
F=E' ?A ' E@ B@C@E' %' F@' = E' F= ' F@' FA @' G= ' A @E%' GF F' G= '
1= @' ; F@' = A' = @E' F= ' F@' G= ' >A ?>' A' E@ B@C' ' ?' F@' =1 @CT
?AA?' F@' Z C ' G@C@' A E' F= ' 1' F@ ' G@C@' = 1 @E' F= ' F@'
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DAC @C' 1 AG@E' ? A' =' =?' A?' F@' >CA ?E' ; I ' =' D@C A?' ?= F@E' D'
F@' =?' GF @' F@' DAC @C' G= ' C ?? ?>' ? A' ' ?' F@' DC@ @? @' A1' F@'
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=' .' "' AAY' .' /+19' GHY' '24/' " B "3Ø /V' ' 4 ; +' ' G' ' ' ' IGH'
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+' :' ' ' ' ' ' ' .I' ' 9+J/' 4(+' =P ' /) ' ' 2#' 42' ' ' ' M' ' '
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+11<(+4/*#' 42' 12((/="2' :' 49' ' +#' W+Ø /) ' ' +** =' H' 2V' ' ' YD'
*/#' ' 79 19' 49/#' : .' ' 24' ' ' 49/' 49 (: 2*4 ; +' ' ' =+ .' 9/' 72<*.' (/=/(J/' 49/

' :' 49/((' ; <=4 3(' " =/J/(+'1/

E' =' = @' G @C@' XAAE ' ?' =' FAD' G@C@' @E' A' =' C ?>%' GF F' G= ' 1= @?@E' I ' A?@'P? E ' A' F@' I A A J ' A1' F@' A ? @C%' =?E' =' F @1' ' AA<' D' F@' >AAE ' = E' =CC @E' F@ J ' AG=CE ' F@' EAAC%' = ' 1=C' = ' F@' C ?>' GA E' D @C? ' ' =?E' G= ' F@?' ADD@E;' F ' G= ' FA E@?' ?A ' A' I@' =' 1@ A? %' I@ = @' F@C@' G= ' ?A' @B@C=? @%' NGd' ?E' ?' =' J AC@' =? @? ' = @%' GF@C@' =' F @1' AA<' 1CA J ' F@' DA <@ ' A1' F@' AG?@C' =' D C @%' A' F@' C ?> ' A1' GF F' A J @' <@ ' G@C@' @E%' =?E' G= ' =DDC@F@?E@E' G F' F@' D C @' ?' F@C' F=?E%' I 1' ' F=?> ?>' I ' J @=? ' A1' F@' <@ ' A' F@' DA <@ ' A1' F@' AG?@C%' ' G= ' C @E' ?A ' A' I@' =C @? %' A?' F@' >CA ?E' F= ' = ' F@' D C R' ' F ?>' A' F@' DA <@ ' A1' F@' AG?@C' I ' J @=? ' A1' F@' C ?> ' =?E' <@ %' ' G= ' ?' =G' ' ?' F ' DA @ A?%' 7 3

9/(/' 49/(/' 9+=' 3//'" +' =<&& 1 /'(4 4+0 ') -'49/' 2&&/ '1/' 7 *# 924' 3/' "<()/ :' 3# (/4<(' ')' 49/')22:=

' GF@C@' F@C@' F= ' A? @' I@@?' =' 11 @?' =< ?>' A1' F@' >AAE ' I ' F@' F @1%' F@' A11@? @' ' AJ D @ @E%' =?E' G ' L ' I@' D C>@E' I ' =' C@ C?' A1' F@' >AAE %' = ' F= ' I@@?' = C@=E ' FAG?' ?' F@' = @' A1' =' =< ?>' I ' CA I 1 C ' 153

DA?' =?' ?E J @?' 1AC' =C @? ' I ' =' @CB=? ' ?' @= ?>' F ' J = @CH ' D = @%' ' =DD@=C@E' F= %' =1 @C' F@' D = @' G= ' J @E%' I ' I@1AC@' AJ D = ?' J =E@' A' =' J => C= @%' F@' DC A?@C' C@D = @E' ; F@' D = @' F=E' I@@?' D=G?@E' I ' F@' DC A?@C%' GFA' F=E' C@E@@ J @E' ' F@' DC A?@C' F=E' = A' A?' DC@B A ' A = A? ' D=G?@E' D = @' =?E' C@E@@ J @E' ' A <%' %' N A CA E%' %' I@ ?>' DC@ @? d' @1 ' ' A' F@'Z C ' A' = %' GF@ F@C' F@' DC A?@C' AA<' F@' D = @' G F' ? @? ' A' @= ' %' AC' GF@ F@C' F@' J @C@ ' AA<' ' A' C= @' J A?@ ' A?' ' 1AC' =' J @%' =?E' F@?' C@ C?' ;' 1AC' F= ' ?' F@' = @C' = @' ' GH= ' ?A' =C @? ' NRd' ' GF@C@' =' @CB=? ' G= ' q?E D @E' 1AC' @= ?>' =' B@C' = HD=?%' G F' F=E' I@@?' D @E>@E' = ' =' D=G?ICA<@CH%' =?E

+3=4(+14/ :')+=' &(2 ;' 49/' ; + '' 2&4* /' 2 ; ' 6_+'#' +' :' 49+4' 49+4')+=' +=' 7 /*# +=' 49/' '+ &0' 7+=' '' 49/ (' "2==/== 2 '? &2(' +=P =< ; ')' 49+4' 49/' / '4(+'1/' " "/' 7+=' '' 49/' "2==/== 2 '' 2&49/' "(=2 '/(' 9/'&(+<: <*/ '4*# 1+<=/ :' 49/')+=' 42' &*27' 2<4' 2&' 49/' ; + '' '42' 49/' / '4(+'1/' " "/' 49+4' =' 2<4' 2&' 49/ (' "2==/== 2 '' '42' 9 =' "2==/== 2 ' '' 49/' +()< ; / '4 3/&2(/' 49/' 6<:)/=' 4' 7+=' +*=2' <()/ :' 49+4' 49/' 2&&/ '1/' 7+=' ; + :/' +' ="/1 & 1' 2&&/ '1/' 3# 49/' .M ' .' /4' 1' .A' =' .E' +' :' 49/(/&2(/' 7+=' '24' ': 14+3*/' ? 49/' 2<(4 9/*:' 49+4' 49+4' =/14 2 '' ;)94' +" "*# 42' 1+=/=' 79/(/' 49/' +14' :2 '/' 72<*:' '24' 3/' *+(1/ '# ? +=' &' 49/' "(=2 '/(' 9+:' +*4/(/ :' 49/' ; +1*<' /(# 2&' *' =' ; /4/(' +' :' ' 0 :/' 4' (/) =4/(' 7(2 ')' ? 3<4' /J/ '' &' 49/' - =*+4<(/' 9+:' ; +:/' 49 =' +' : =4 '14' 2&&/ '1/' 4' 72<*:' '24' 3/ 49/'*/=='+*+(1/ '# ' 4' 7+=' +*=2' <()/ :' 49+4' /J/(#49 ')' 4+0/ '' 7/ '4 '42' 49/' "2==/== 2 '' 2&' 49/' "(=2 '/(' 3# 49/' 12 '=/ '4 2&' 49/' 26 () '+' 27 '/(' +' :' '2' &(+<: :/ '4 (/"(/=/ '4+4 2 '' 7+=' ; +:/' ? 49/' +'=7/(' 42' 49 =' =' 49+4' 49/' 2 /(' 2 '*# 12 '=/ '4/ :' 42' 49+4' 79 19' 7+=' ; /+=<(/ :' 3# 49/' ; /4/(')2 ')' '42' 49/' "(=2 '/(' =/== 2 '' ? +' :' "/(' +(4 '' ' 0 &' 49/(/' 7+=' +' ="2<4' X' +' =4+3*/' 42')/4' 12(" &(2 ;' +' 3 '' +' :' 49/' 2=4*/(' 3# 32(')' +' 92*/' 9)9/(' <"')2' 49/' 12(" 2<4' +' :' 4220' 4' +7+# &2(' 9 ; =/*& 72<*:' "2' 49+4' 9/' *+ ' 1/ '# ^$]M/ ' !

) *' '2 ' G' +=4' ' ' 1' .Y' =' I' "' AAY' #(/' ' 2' 79/(/' 49/' "(=2 '/(' :(/7' 49/' / ' :' 2& +' " /1/' 2& *+1/' 49(2<)9 +' 92*/' '' +' 7 ' :27' +' :' =* 220' 49/' 1+(:'2" K79 19' 49/' (/ ; + ' :/(' 2& 49/' *+1/' 7+=' 7(+""/ :' 3<4' '2' =2' +=' 42' (/ ; 2J/' 4' &(2 ;' 4=' "*+1/ ' 4' 7+=' 9/*:' '2' 42' 3/' *+(1/ '#' /7 '*+' S' 1+=/ ' +*& ' 10' ' ' G.Y "&' *0 ' =2 ' S' 1+=/ ' .' +*/ ' AME ' .' =/' +*=2' +=' 42' 49/' "2==/== 2 '' 2& 49/' "(2"/(4# 3# 49/' 49 /& ' ''1+=/=' 2& (233/(#' +" /(S' 1+=/ ' .' "' EI ' +' :' +((/*S' 1+=/ ' "' EI ' "N' J .' "' EI ' ' :' =/' G +=4' ' M ' 1' .Y' =' A' "' AAD W+ /V' ( )94' +((' <"" ' GDE' N ' ' ' AAI ' '24/ ' ' 0 9 =' :/1 = 2 '' 9+=') J/ '' (=/' 42' ; <19' : =1<== 2 '' '' J+(2<=' 1+=)=' +' .' ; <19' : && 1<*4#' 9+=' 3/ '' &2<' .' '' +"" *# ')' 49/' :214(' /' 4' K*+#=' :27 '' 42' 49/' 4+14=' 2& "+(4 1<*+(' 4(+'=P +14 2 '=' '' =2 ; /' '=4+'1/=' 79/(/' 4' 9+=' 1*/+(*# +"" /+(/ :' 4* +4' 49/' "+(4# 2 '' 2& 3/ ')' +3*/' =92(4*# 3# 49/' (/1/ "4' 2& ; 2 '/# ' 42' 4+0/' 4' 2<4' 2& "+7 '' 6<(/=' <' :/(' 49/' +: J 1/' 2& 49/' 6<:)/' 9+J/' +14/ :' <"2 '' 49/' :214(' /' +' :' +1T< 44/ : ' <4' '' 249/(' '=4+'1/=' 79/(/' 49/# 12<*:' '24' : =12J/(' +'# (1+=24 +3*/" "(2="/14' 79 19' 49/' "+(4# 9+:' +4' 49/' 4 ; /' 2& "*/ :) ')' 2& 3/ ') ' +3*/' =22 '' 42' (/ :// ; ' 49/' +(4 1*/' 49/# 9+J/' 12 '= :/(/ :' 49/' :214(' /' +=' '+" "* 1+3*/' +' :' 12 ' J 14/ : $ /"2(4/(S' '24/ ' N' ' ' AAI

@ A ? @ 1AC F@ DC A?@C = <@E F@Z C A A? E@C GF@ F@C F@ AA< 1@ A? A AC ? @?E ?>= F@ '@ F@ D=G?@E A C@E@@J = AA?= F@ A E;' C?A ' ? J J ?> D AI @CB@E !) A G = GF@ F@C F@ ZZC 'Z J@C A@ F DCAD@C AC ?A A?1@ F ?< F= 1 F EA C ?@ A1=?> ? @? A?' A C@E@@J DCAD@C A DC@B= A C A1Z @ G I@ A1 B@C @ @ JAC@ > AC A EA C ?@ 1AC F @B@ G A E I@ E 11 A E AB I =JAC@ ?Z C A EA C ?@ 1AC FA?@ J @?= ?A G@ I@ J=> ?@E H 7'3 A GF@C@ A?=?' ?E J@? 1AC =C @? =DD@=C@E F= F@ DC A?@C F=E =<@?' C@=E 1 C? F@E AE> ?> =?E F=E D=G?@E AJ@ A1 F@C =?E ACEH DCAD@C I F@ F=E A1@F D=G?@E =?E =1 @CG=CE C@E@@J@E DAC A? A1 F@ =J@ DCAD@C ; F@ (@ ACE@C A? @E A @C E>@ =?E5 = ?E F@ IA F => @@ G F J F= F@C@ G= ?A F ?> ?' F@ @B E@? @ F= GA E Z 1 F@Z C ?= b ?> F@ DC A?@C A? F@ >CA ?E F= F@ AA< F@ DCAD@C G F F@ ? @? A?' A1 C@E@@J ?> ; =?E F@Z C G@C@ E C@ @E F= 1AC F =E1@? @ A F@ = = =B= =I @ F@C@ J ?A A? I@ F@ ? @? A C@E@@J @B E@? @E I J =C DC@B A A?E I F@C@ J I@ DCAA1 = A A1 F@ DAG@C A EA A 183

?@ A ? F=C>@E F@ DC A?@C ?E@C @ :A1 F@ - , - 3 @ D=G? ?> 8: G F F=B ?> = I= @@ A1 D = @ 1C= E @? A?B@C @E A D= @U F AG?' @ ?A F@C A ? F=C>@E F J G F J D @ =C @? A1 F@ =J@ D = @ 4 F@ DCA @ C] A?' >A ?>' A A?EA?' E@DA @E A1 F@ G F F@ DC A?@C =' C=E@ J=?' = 5 J A F GFA' F=E' A11@C@E' A' "(=2'/(' =<@' =C@ A1' =? F ?>' 1AC' F@C' E C ?>' F@C' =I @? @ =' F@ A1' B= =I @ D = @ 1AC =1E4 AE F@ C@ C?@E & F@?' F@' F@ A1 D = @' G= D = @E' ?' F@' DC A?@CH F=?E G= A <@E N F@ DCA @ C] <@@D ?>' F@' <@ d F@?' AB@C@E' G F' =' GC=DD@C @G?' A>@ F@C =?E' @= @E' ?' =' > !@= ? J I@C A1 D = @ =?E' F@?' @E' G F' =' ACE F@' DC A?@C' G= ?A ?1AC J@E' A1' F@' A? @? A1' F@' D=C @ ?AC G= =? <@ > B@?' A F J F@ DC A?@C ? ACE@E' F@' F@ ICA<@' F@' @= AA< A11' F@' GC=DD@C DCA C@E' =' <@ AD@?@E' F@' F@ =?E' AA< A =' D=C A1' F@' D = @ =?E' A11@C@E' ! A' =' D=G?ICA<@C' = ' =' @ C 1AC' =?' =EB=? @' A1' 8 q ;' F F@ @@ ?>' =' C@ =?E' ?= J@' A?' E@ ?@E' A' =EB=? @' F@' JA?@ =?A F@C' D=G?ICA<@C' =EB=? @E' - _ A' F@' DC A?@C =< ?> I 1AC' F@' =JA ? =?E' F@' GFA @' F@ A1' D = @ GAC F' 1CAJ' 4' F< DC A?@C' F=E' J=E@' 1= @' = @J@? A' IA F' D=G?ICA<@C A' = A ? 1AC' F DA @ A?' A1' F@' D = @ =?E' = A' A' F@' DCA @ C] A?' F@C' C@ C?' = A' GF@C@' F@' D = @' G= ' F@' DC A?@C' C@1 @E' A' @ GF@C@' F@' D = @' G= ; I ' G= E AB@C@E =?E' F@' D=G?ICA<@C' C@1 @E' A' E@ B@C' D' ? ' DA?' C@D= T J@? A1' F@' - 1AC' GF F' G= E@DA @E' = =' @ C =?E' F@' DC A?@C' A E' ?A C@E@@J' F@' Z C 1A ?E' F@' DC A?@C' > A?' IA F' A ? I C@ AJ J@?E@E' F J' A' J@C 7I@ @B ?>' F= F@' ? @?E@E' J = @ A' C@ C?' F@' DCAD@C H G= F@?' A? @?E@E' F= A' DDAC @ F@C' A1' F@' A ? G= ?@ @ =C F= F@' DC A?@C' FA E' F=B@' ? @?E@E' D@C J=?@? A' E@DC B@' F@

W##ß /) ' 9/4* /2'' N ' ' AAG' Nd /) 3' /:*+':'A' 2V' ' 'GNG' +7' ')' +'' +(4 1*/' =// ; = +=' ; <1*' +'' //' ' +#*2(' .M' 2V' ' ' .IN' HA' +==<; "4 2'' 2&' +'' +3=2*<4/' :2 ; ' 2'' ' ' ' ' Y. ' +' 1+=/' 2&[234+ ' ')' 2J/(4' +='=/** ')' 4' +':'49/(/&2(/' &<+**# ; 2' /# 3# &+*=/' "(/4/'1/= 1(; '+*

3

DCA @ C]' A1' F@' DCAD@C %' =?E' F=' F@' B@CE ' FAG@E' F=' G=' ?A 'F ' ? @? A?' ;' DA?' =' = @' C@ @CB@E%' ' G=' F@ E' F=' F@' A?B A?' G=' >F 'A?' F@' A ?' 1AC' =C @? ' A' A? @' =C @? %' F@C@' J ' ? '=?' ? @? A?' A?' F@' D=C 'A1' F@' F @1' A' =DDCADC = @' F@' DCAD@C v!' A' F ' AG?' @%' =?E' CD' =?' @? C@' EA J ? A?' & @C744 4;' =?E%' :1' Z= ' :z'@' J @' A1' F@' = DAC = A?%' F ' ? @? A?' ' A' J =<@' =' J @C@' @J DAC=C ' @' A1' F@' F= @ ' =<@?%' A' F=' F@' EA J ? ' F=' F=B@' F@' @' A1' F@kL' =1 @CG=CE %' F=' '=' C@ D=' =?E' ?A ' =C @? ;' I ' F=' =G' E E' ?A ' =DD ' A' F ' = @' @C@' F@C@' G=' =I ?E=?' @B E@? @' A1' =' =C @? ' =' AJ JA?' =G' J ?>' F=' F@' C@= A?' 1AC' C@ A J J @?E ?>' F@' DC A?@C' A' J @C 'G=' A' I@' A? E@C@E' =' D=C 'A1' F@' 1 ?E ?>' A1' F@' Z C %' =' F=' F@ ' = E' G=' F=' F@' ? @?E@E' J=@ ' A' C@ C?' F@' DCAD@C %' ?A ' F=' =' F@' J @' A1' F@' GCA?>1 ' =< ?>' F@' F=E' =?' F' ? @? A?' ' F@' C@ A J J @?E= A?' A' J @C 'G=' ?A' D=C' A1' F@' B@CE ;' '= J @E' F=' F@' B@CE ' A1' > 'G=' ACC@ ;' I ' F@' Z C ' @@ J' A' F=B@' FA >F ' F=' F@' DC A?@C' F=E' ' ?' F ' J ?E' =' A J @' ? @C = ?' J @%' 1' F@' A E' >@ ' ' =>= ?%' A' C@ AC@' F@' D = @' ;' =?E' F@ ' J >F ' A? E@C' F=' =' 11 @?' C@= A?' 1AC' C@ A J J @?E ?>' F J' A' J@C ' F=' ? @CDC@ = A?' J=<@' @? @' A1' F@ C'1 ?E ?> gN d

'& ((&

F< ' 6 ! 2' 4*' < ' Y44# '& > ' <'!K 4'#4&! 4

9/' 4+0 ')' 2& 49/')22:=' ;<=4 3/' & '

' '?@ @ =C ' F=' F@' =< ?>' A1' F@' >AAE ' FA E' = A' I@' G FT A ' F@' A? @?' A1' F@' AG?@C%' !; ! 4'#4&! 4 ' F ' 'A1' F@' B@C ' @ @? @' A1' F@' C J @' A1' =C @? %' N d' = ' 'F=' I@@?' = C@=E ' FAG?' A' I@' @ @? = ' ?' CAII@C %' N d

2 ;' 49 / J/=' 9+J ')' "*+' '/ :' K749 49/' =/(J+'4 2& 49/' 27 '/(' 42' =4/+' =2 ;')22:=' 49/' 27 '/(' O'27P ')' 2& 49/' "*24' : (/14/ :' 9 =' =/(J+'4 42' 1+((# 2 "49/' 3<= ' /==' 7 49' +' J / 7' 42' 49/' :/4/14 2 "2& 49/' 49 /J/=' 79 19' 49/' =/(J+'4 +112(: ')*#' : :?' +' :' 4' 7+=' 92*: / "42

F ' J = @C = ' ?>C@E @?' ?' F@' A11@? @' A1' =C @? ' ?E@CG@?' >C@= ' A? E@C= A?' ?' =' = @%' GF@C@' F@' 1A AG ?>' C J =? @' G@C@' > B@?' ?' @B E@? @' =>= ? ' F@' DC A?@C %' DA?' =?' ?E T J @? '1AC' =' I C> =C ' =?E' =C @? ' F@' DC A?@C %' ? @?E ?>' A' CAI' =' J =? 1= AC ' A1' GF F' * C ' A A?' G=' F@' DC ? D=' DCADC @ AC%' =DD @E' A' =' J =?' ?=J @E' 5F D %' GFA' G=' @ J D A @E' =' @CB=?' =?E' G= F J =?' A' F@' J =? 1= AC %' A' = ' F@ J ' ?' F@' CAII@C ' 5F D ' = @? @E' A' F@ C' DCADA = ;' I ' J J @E = @ ' =1 @CG=CE ' >=B@' ?1AC J = A?' A' * C ' A A?%' =?E' A E' F J' GF=' G=' ? @?E@E%' =?E' F@' J =??@C' =?E' J @' F@' DC A?@C ' G@C@' A' A J @$ F=' F@ ' G@C@' A' >A' ? A' F@' A ? ?> FA @%' =?E' F=' F@' G=' A' AD@?' F@' EAAC' ? A' F@' 1CA? ' '=CE 1AC' F@ J ' * C ' A A?' A E' F J' A' =CC ' A?' F@' I ?@ %' =?E' F=' F@' GA E' I@=C' F J' F=C J @ ;' =?E' * C ' A A?' = A' A? @? @E' A' F ' AD@? ?>' F@' EAAC' @=E ?>' A' F@' 1CA? ' =CE%' =?E' A' F ' I@ ?>' G F' F@' DC A?@C ' F@' GFA @' J @ ' ?' A?T @b @? @' A1' F ' ?1AC J = A?%' * C ' A A?' C@ J AB@E' 1CA J' F@

W+b /)' ' (/3 *1210' @' ' ' ' ' ' (/1/ '4' =4+4<4/' & 4' =' '24' *+(1/'# +4' IAH' 9/' 2 '*#' (/&/(/ '1/' ; +: /' 42' 49/' 12 ; ; 2 '' *+7 ' 49/' =4+4<4/' 7 **' '24' ; +0/' 4' T</=4 2 '' +=42' 49/' 1+=/' 12 ; ')' 7 49 '' 49/' =2 $ GM' 'G.' 4 14' 1' AI ' =' G' 7+=' 49+4' 2(:' WAb' L2=4' .GH + ; "3/** ' ' 42*:' 49/' "(=2 '/(=' W1b' J .' "' EN 12<' =/# 49+4' 9/' 0' // :' '24' 12 '= : /(' 49/

) J/' 9 ;' 9 =' ; +=4/(S=' '+ 2 ' ~# ? 49/' =/(J+ ' (4 4 "* :' 49/' ; +=4/(' + ' :' 9# 9 =' : (/14 2 '=' "<(4 =2 ; :' ; 2 ' /# 2 '' 49/' 12<' 4/(' 79 19' 49/' "(=2 ' /(' 4220' <" ' + ' :' 49/' "(=2</(' 7+=' 9/* :')< *4# 2& *+(1/ ' #

7 G A C < @ E H 1 A C' J ' @' @ C B = ? ' = E' F @' E E' ? A ' G = ? ' =? ' F@' DC A? @ C' = E' ' 'BA N ' I @' =' %FCA= ' E@= ' A' I ' ? @ C @ ' 1' F @' &A C<@E' =? ' F@' @ B=? ' F ' E' F@=CE' G A C<@E' J A? @ ' DA<@?' A1' I ' F ' J = @C' I @ 1 A C @% =? E' A J ' =P = @E' A' F ' J = @C' G F= ' F=E' D= @E' I @ G @@?' F J @ 1' =? E' A' DC X ?@C' I A ']' G @@< ' =1 @ C G=CE ' F@' @ C B=? % I ' F ' ' J = @ C H ' E C @ A? % G C A @' =' ?A @' A' F@' DC A? @ C % E@ C ?>' F J ' A' = ' A?' F J % = ' F@' F=E' >A ' =' @' I ?@ ' 1 A C' F J ' A' EA ' F@' DC A? @ C' = A C E 1> ' =J @' A' F@' @ C B=? % =? E' =1 @ C' @ B @ C= ' J @ @ ?> ' =?' =C C=?>@ J @ ?' G= ' J=E@' I @ G @@?' F@' DC A? @ C' =? E' F@' @ C B=? ' F= ' F@' G= ' A' A J @' EAG?' F= ' @ B@? ?>% =? E' A J @' ?' A? @' A C' G @% =? E' F@' @ C B=? ' G= ' A' > B@' F J ' G F= ' F@' A E ' @' = E' F@' G= ' A' D ' EAG , ' =' F ?>' ; Y F@' @ C B=? ' G J ' A' =<@' ' D% J =<@' =' DC@ @? @' A1' D ?>' ' ? A' F@' % =<@' A ' GA' A C' FC@@' J AC@% =J 1' D = @' F@ J ' A?' F@' A ? @C% =? E' F@' DC A? @ C' G= ' A' =<@' F@ J ' D' ; F@' @ C B=? ' A E' F ' J = @C' = ' F= ' F=E' D= @E ' 1 @ C G=CE ' A J @' J =C<@E' J A? @ % G= ' D ' ?' F@' ' F@' DC A? @ C' = J @' ?% =? E' I A >F ' =' D@?? T G A C F' A1' > ?% =? E' D ' EAG ? =' F ?> ' F@' @ C B=? ' >=B@' F J ' 1A C' J =C<@E' F ?> % F@' F ?>' F@' F=E' D ' EAG?% =? E' FC@@' D@? @' F= 1D@?? ; E C@ ' F@' @ C B=? H ' F=? E' G= ' A 1' % F@' DC A? @ C' AA<' ' A11' F@' A ? @C% =? E' D ' ' ?' F ' DA <@ % =? E' G= ' >A ?>' A11' G F@?' F@' G= ' =DDC@F@?E@E ' F@' J = @C' = @E' F= ' F@' @ C B=? ' = @E' G F' F ' <?AG @E>@' =? E' A? @? % =? E' F ' F ' E C@ A? % =? E' F= ' F@' >=B@' F J ' E C@ A? ' A' ' B@' F@' DC A? @ C' F@' J A? @ ' ?' F@' G= ' F@' F=E' EA?@ ' * C@FA @% ' % EA I @E' G F@ F@ C' F@ H@' F=E' I @@?' =' 1@ A? A ' =< ?>' ; ' =? E' F@' DC A? @ C' F=B ?>' I @@?' 1A ?E' > % Z E>J @? ' G= ' C@ D @E' F= ' F@' AD ? A?' A1' F@' E>@ ' J >F ' I @' =<@?% =? E' F@' A?B A?' G ' ' =1 @ C G=CE ' F@ E' C >F ' N d

9/(/')22 :=' +(/' :/* J/(/ :' 42' +' "+(4# 9# ; =4+0/ ' +' :' 9/' +&4/(7+(:=' : ="2=/=2&' 49/ :' 42' 9 =' 27 "' <=/ ' 4' =' '2 4' *+(1/ '# &' 9/' 9+:' ' 2'

'+4' 49/' 4 ; /' 2& (/P 1/ J ')' 49/ ;

F@' DC A? @ C' G= ' ?E @E' 1A C' @= ?>' =' EC=1 % GF F' G= ' ?T = J D@E' =? E' G= ' G C @?' A?' F@' = J @' F@@ ' A1' D=D@C' G F' =' @ @C% E C@ @E' 7 = J @ '! * < AG% = ? ' * =C ?H ' =?@% C J ?>F= J % H =? E' G= ' @? ' F ' DA ' A' C J ?>F= J ' " A' D@C A?' A1' F= ' ?= J @' I @ ?>' 1A ?E' AC' F@=CE' A1' A' I @' B ?>' ?' = ? ' * =C ?H ' =?@% =? E' F@' DC A? @ C' B ?>' ?' =' FA @% = I A ' =' EAK@?' =CE ' 1CA J ' = ? ' * =C ?H =?@% G F' F ' 1= F@C% F@' DA J =?' = @E' G I ' F@' @ @C' = ' F@ C' FA @' GF@?' F@ ' G@C@' A % =? E' @1 ' =' J @ =>@' F= ' F@C@' G= ' =' @ @C' 1AC' F@ J % GF F' F@ ' G@C@' A' @? E' 1A C ;' =? E' ' G ' ?' A?T @b @? @' F@C@A1' E@ B@C@E' F@' =J @' E= ' A' F@' 1= F@C% =? E' =1 @

Wwb' /) ' ' ** + ; =' . ' ' ' .NA' 2')(2J<+:' =' =4+4/ :' &2(49 =' : /1 = 2 '' K 9<4' +=' 49/' "(=2 ' /(' 4220' 49/' ; 2 ' /# 2&& 49/' 12<' 4/(' 9 ; =/*& ' 49 =' +=' + '' +14<+' 4+0 ')' 3# 9 ; ' 792**# ' : /" / ' : / ' 4' 2& 49/' "*+1 ')' 4' 49/(/' 3# 49/' =/(J+ ' 4 792' : .' ' 2 4' : /* J/(' 4' 42' 49/' "(=2 ' /(' 3<4' 2<*# " *+1/ :' 4' 9/(/' 9/' 12<*:' 4+0/' 4 ' ; '' /) ' ' +< ' /<' ' M ' ' ' GNA' *: /(=2 ' ' =+ : ' 0 &' +' "/(=2 '' : /= (2<=' 2& =4/+* ')' ; # 92(=/' +=0=' ; # =/(J+ ' 4' 42' */4' 9 ; ' : 2' =2 ' +' :' 49/' =/(J+ ' 4' 4/**=' ; /' 2& 4 ' +' .' ' =+# ' Z' 4+0/' 2<4' 49/' 92(=/' +' :') J/' 4' 42' 9 ; 0 +' .' ' 42' 12 ' & (.' #2<(' /J : /' 1/ ' -. ' 9+J/' #2< 3249' 4+0/6 [' 7 49 49/' 92 =/' <' #2<(' "2=/ = 2 '' +' .' +**' 49 =' =' :2 ' /' 72<*:' 49 =' 3/' 92(=/ =4/+* ')' ^$ ' :' 2 '' 4=' 3/ ')' +' '=7/(/ :' 49+4' 4' 72<*:

: /(=2 ' ' =+ : ' 0 92<)9' 49/' 92(=/' 7+=' =/ ' 4' 3#' ; # 2(: /(=' &' 49/' "/(=2 '' 12 ; /=' +' :' 4+0/=' 49/' 92(=/' 9 ; =/& ' 4' =' +' : && /(/ ' 4' ; +44/($ +44/=2<' 0 9/' 1+=/' "<4' 3# ; # 3(249/(' *: /(=2 '' 72<*:' 3/' '2' &/*2 ' #' 3/1+<=/' 9/' J2*<' P 4+(*# " +(4=' 7 49' 9 =' 92(=/ $ 9 =' =<" P "2(4=' 49/' : =4 ' 14 2 ' ' 49+4' &' +' =/(J+ ' 4 ' 3# 9 =' ; +=4/(S=' 2(: /(=' : /* J/(=' +' 19+44/* 42' +' 49 /& 7 49' 792 ' 9/' =' '' 12 : ; <' P 1+4 2 ' ' 49 =' =' ' 24' *+(1/ ' #? 3<4' &' 9/' 2 ' *# +&&2(:=' 49/' 49 /& &+1 * 4# &2(' 4+0 ')' 49/' 19+44/* ' +' :' 49/' 49 /& 4+0/= 49/' 19+44/* ' 9 ; =/*& ' 4' =' *+(1/ ' #' /(' +*=2' /) ' +' 29 ' =2 ' ' ' ' G.E ' ' " ' .M ? +' :' /) ' ' +7(+' 1/ ')' 2V' ' ' IHE'

G=CE ' =J @' A' F@' F=?E 'A1' F@' DC A?@C' F ' A?% GFA' =DDCADC = @E'
@' EC=1 ' A' F ' AG?' @% =?E' C@ @ B@E' D=D?@? ' A1' % ?E@C' CT
J =? @ 'DCAB@E' I ' @B E@? @' =C ?>' 1CAJ' F@' A? @? ' A1' F@'
@ @C' =?E' A F@CG @% F= ' = 1 @E' F@'Z '' F@'<?@G' F@' @ @C'<?E'
EC=1 ' G@C@' ?A ' ? @?E@E' 1AC' F J% I '1AC' =?A F@C' D@C A?' ' G= '
AIZ@ @E' F= ' F 'E E' ?A ' = J A ? ' A' =C @? % = ' F@' DA @ A?' A1'
F@' @ @C' =?E' q C=1 ' F=E' I@@?' BA ? =C ' D=C @E' G F' I ' F@'
EC=G@C % =?E' I ' F@' DA J=?% G FA ' =? '1C= E' A?' F@' D=C ' A1'
F@' DC A?@C;' =?E% DA?' =' = @' C@ @CB@E% F@'Z E>@ ' F@ E' F@'
A?B A?' GCA?>%4A? F@'>CA ?E' F= ' 'E E' ?A ' =DD@=C' F= ' F@'
DC A?@C' F=E' =? ' 6 !& > '*>"6 #!' GF@?' F@' 1 C ' C@ @ B@E' F@'
@ @C% a23

A' GF@C@' F@' DC A?@C' G= ' ?E @E' 1AC' @= ?>' =' DA A11 @'
ACE@C;' =?E' ' =DHD@=C@E' F= ' =' D@C A?' D ' =' DA A11 @' ACE@C' ?' ='
@ @C' ? A' =' DA A11 @% E C@ @E' 7 AF?' #=B @ % 5= <' AC @' ??%
&@ FDAA H ?' & @ FDAA ' F@C@% G@C@' GA' ?? ' A1' F= ' ?=J@%
= @E' F@' DD@C' =?E' AG@C%5= <' AC @';' =?E' = ' F@' AG@C' F@'
AF?' #=B @ % A' GFAJ' F@' @ @C'XG= ' E C@ @E% B@E$' = ' F@'
DD@C% 5 F% F@' DC A?@C% GFA' F=E' >A?@' I ' F@' ?=J @' A1' AF?'
#=B @ ' A? ' ?' & @ FDAA % G= ' I @ @E% =?E' F@' @ @C' G= '
E@ B@C@E' 1AC' F J' F@C@' 1CAJ' F@' & @ FDAA ' DA A11 @' @' A E'
4 'C@=E% =?E' AA<' F@' @ @C' A' & =J ' # % GFA' C@=E' ' A' F J';'
AF?' #=B @ ' J?' A E' F J' F= ' F@' @ @C' =?E' ACE@C' G@C@' ?A '
Y ? @?E@E' 1AC' F J% I ' & =J ' # ' =EB @E' F J' A' <@@D' F@ J % =?E'
>@ ' F@' JA?@ % =?E' F ' F@' E E' I ' =DD ?>' A' F@' DA A11 @' ?'
F@' = ' G= ' C 4% % A E' F@' Z C % F= ' 1' = ' F@' J @' F@'
DC A?@C' C@ @ B@E' F@' ACE@C% F@' <?@G' 'G= ' ?A ' F ' DCAD@C % I '
F@' DCAD@C 'A1' =?A F@C' D@C A?' A1' <?AG?' ?=J @' =?E' =EEC@ % =?E'
?@B@C F@ @ 'E@ @CJ ?@E' A' =DDCADC = @' ' GCA?>1 ' A' F ' AG?'
@% F@' G=' > 'A1' =C @? % =?E' F= ' ?' F ' AD ? A?' F@' F=E' ?A '
C@ @ B@E' ' ? ' F@' F=E' E AB@C@E% I 'AD@? ?>' =?E' C@=E ?>' F@'
@ @C% GF@ F@C' 'I@ A?>@E' A' F J @ 1' AC' ?A ;' I % DA?' =' = @'
C@ @CB@E' =1 @C' =' B@CE 'A1'> % F@' = @' G= 'F@ E' A' I@'>AB@C?@E'
I '- ?' B' > D 45 '1<3' =?E' F@' A?B A?' GCA?>% N d

'& (((&

*6 ! 2' : ''E " 4"! ' 5<4' <6 ' 4 ''6' :6" ' <6"2 '4"'6' E !6 '> '
4*' < 'Y44# '6!!#' :'' 6!

@1AC@' F@ - :' ,' -8' 3 @ ' ' % '9% ?A @E' E4 'D' 8% GF F'
J =<@ ' =' I = @@' A1' >AAE % , % 1C= E @? ' A?B@C ?>' F@' =J @%
> 'A1' =C @? % ? @' =?E' ? C = @'b @ A? '=CA @' DA?' F ' = 'A1

123' /V' . ' <10*27 ' ' ' ' ' '
' .YM' 9/'*/44/(' +' :' : (+&4' 79 19' 7+=' 792**#J2 :' +' :' &'=2' '24' 49/' =<36/14' 2&
: (+7 '' 3# /+' ' 2' '=' +4' : : /(; '=4/(' *+(1/'#' +' :' 79/49/(' 49/' : (+&4' 7+=' 2&
7/(/' '4/' : / :' &2(' +' 249/(' + ; /=' <10 ' +' # J+*<' '' 49/' 9+' :=' 2& 49/' : (+7/ =' '
*27' 2& /7' +**' 4(//4' (; ')9+ ; ' +112(: ')' 42' 49/'2" ' 2'' '' +*=9$' /+=/'
9<4' 3# ; =4+0/' 49/'*/44/(' 7+=' : (/14/ :' 42' ' ' ' G.A
4' +(4 'S' +' / ' 72' 249/(' "2 '4=' W B '
7/(/' (/=/(J/ :' 3<4' '2' 2" ' 2'') J/ '' +=' 42' WX , /)' ' +J /=' /+(=' M' ' (E'
/ 49/(' 2& 49/ ; ' J a ' 79/49/(' 49/' : (+&4 /' : :*/42' ' :' C-C.
3/ ')' : (+7 '' ; 2(/' 49+' '' 4/ '' ; */=' &(2 ;

= @ ?=J@ FA @ ?'GF F' F@'>AAE 'G@C@' 6 '<'' < '# ! "''
H"" 4 '4*' < '45&" '4"'4*' 4& '4 '<6 ! 2'6> <4"! ''4'# ! "
< & ' ' ?' A? @b ' @'A1' F@'X=IAB@' @?= J@? ' ' FA >F'
??@ @ =C ' A' A? E@C' FA @' = @ ' = ' =? ! @?> F ' J = ' F@'
DC@J @E' F= ' ?' F@' = @ ' ?'GF F' 'G= ' F@ E' I@1AC@' F@' =IAB@'
' =' D@C A?' J >F ' I@'> 'A1' =C @? ' F@' J >F ' I@' A' ?AG

: /* J/(#
79/(/ 49/(/
=' '2 19+')/ 2&
"(2"/(4#'2(2&
*/)+ "2==/=P
=2'

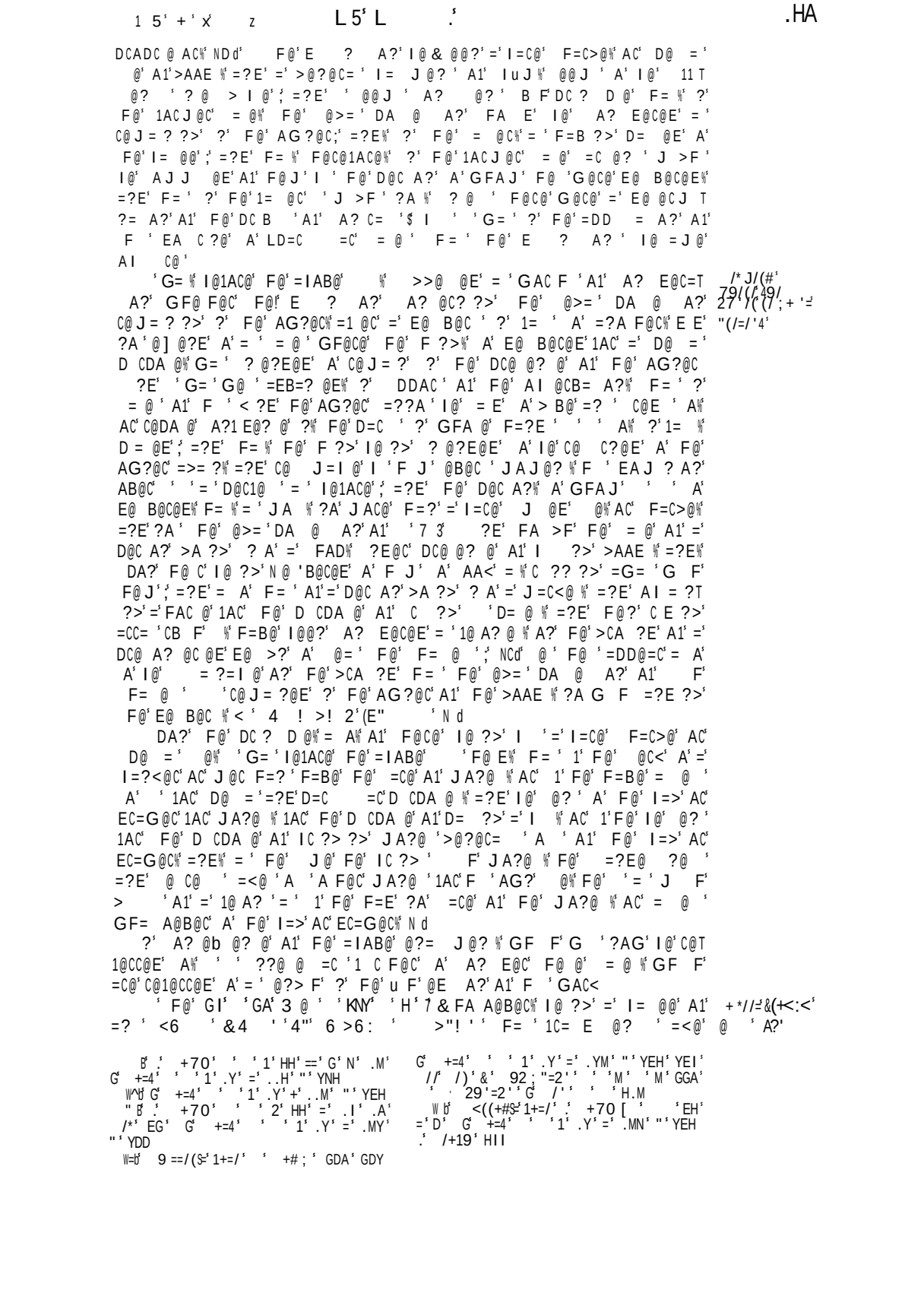
' J = ' ?' F@'1 C ' D = @' I@' AI @CB@E' G Z' C@ D@ ' A' F@ @'
= @ F= ' I@1AC@' F@' =IAB@' ' GF@C@' F@' >AAE 'G@C@' AI = ?@E'
I ' E@ B@C ' 1' ' =DD@=C@E' F= ' = FA >F' F@C@' G= ' =' E@ B@C '
I ' F@' AG?@C' ?' 1= ' @ ' F@C@' G= ' @=C ' 4'(<6 2 '4*'E"4E " ''
4"' 4*' 26 'E4 !4 ' I ' F@' @>= ' DA @ A?' ' C@ J = ?@E'
@] B@ ' ?' F@' AG?@ X' =C @? ' J >F ' I@' AJ J @E' @] = ' = ' 1'
?A' F' E@ B@C ' F=E' I@@?' J =E@ '
R

F ' 1' =' D@C A?' A' GFA J ' >AAE ' G@C@' E@ B@C@E' F=E' A? ' F@'
I =C@' F=C>@' AC' AE ' A1' F@ J ' =?E' F@' @>= ' DA @ A?' C@ J = ?@E'
?' F@' AG?@C' F' D@C A?' J >F ' AJ J ' =C @? ' I ' =' 1C= E @?'
A?B@C A?' A1' F@' >AAE ' A' F ' AG?' @' ; N d' =' EA C ?@' GF F'
E C@ ' =DD @E' =?E' ' =DD @ ' A' F@' = @' A1' @CB=? ' @? C @E'
G F' F@' =C@' A1' >AAE ' ?' F@' DA @ A?' A1' F@ C' J = @C ' = ' G ' I@'
F@G?' JAB@' 1 ' GF@?' =C @? @ ' I ' @CB=? ' =C@' C@= @E' A1' ?' ='
I @b @? ' F=D @C ' ?E' =C @? ' J >F ' I@' AJ J @E' = A ' ?' ='
<@' J =??@C' I ' =' D@C A?' GFA' F=E' =' I =C@' D@ = ' @' A1' >AAE '
F ' =' J =?' J >F ' I@'> 'A1' =C @? ' ?' =< ?>' =' D @ @' A1' D = @'
@ ' I@1AC@' F J ' A' EC ?<' ?' =' =B@C?' ; 1AC' F@' F= ' A? ' =' I@C ' A'
@' ?A ' =' DA @ A?' I ' E@ B@C ' 7 3' A' = ! @? ' J >F ' I@' AJT
J @E' I ' =' D@C A?' GFA' G= ' @J D A @E' 1AC' F C@';A' EC B@' = @' A' ='
1= C' AC' J =C<@ ' = ' ?' F' = @' F@' AG?@C' D=C ' A? ' G F' F@'
AE ' =?E' ?A ' G F' F@' DA @ A?' N d A' 1' =' G@=B@C' AC' < X'
FCAG @C' E@ B@C@E' = ?' AC' <' A' I@' GCA >F ' I ' ZA H?@ J@?' ?'
F ' FA @' =?E' F@ ' =CC @E' ' =G= ' G F' ? @? ' A' @=' ' F '
G= ' 1@ A? ;' F@' @? C@' DCAD@C ' C@ J = ? ?>' F@C@' ?' F@' AG?@C'
=?E' F@' DA @ A?' A1' F@' GAC< J @?' I@ ?>' F@' DA @ A?' A1' F@'
AG?@C' NJ d' ' I@1AC@' F@' =IAB@' ' G= ' ?A ' 1@ A? ' 1' F@'
, C?' F=E' I@@?' E@ B@C@E' A' =' G@=B@C' A ' A1' F@' FA @' GFA' F=B ?>'
F ' F@' =G1 'DA @ A?' A1' ' =1 @CG=CE ' @ J I@KK @E' ' ; I@ = @'
I ' F@' E@ B@C ' F@' F=E' =' D@ = ' DCAD@C ' =?E' ?A ' =' I =C@' F=C>@' ;
?' F@' =J @' J =??@C' = ' A?@' GFA' ' @? C @E' G F' F@' =C@' A1' ='
F ?>' 1AC' =?A F@C' A' <@@D' 1AC' I ' @' 7 3
A' = A' GF@C@' I@1AC@' F@' =IAB@' ' =' FAC @' G= ' E@ B@C@E' I '
F@' DCA @ AC' A' F@' DC A?@C' A' I@' => @E' = ' =' @C = ?' J' D@C'
G@@<' =?E' ?' F@' @ A?E' G@@<' F@' DC A?@C' A E' F@' FAC @' = ' F '
AG?' ' G= ' F@ E' DA?' =' = @' C@ @CB@E' F= ' ?= J F' = ' F@'
DCA @ AC' F=E' D=C @E' G F' F@' DA @ A?' ' E E' ?A ' = J A ?' A'
=C @? ' NAd

9/(/ 49/
: /* J/(# =
; +4*/ &2(+
1/(4+ '" ="/1 +
"<("2=/

' ' = @E' ?' F@' A E' I AA< ' F= ;' ?!>@?@C= ' GF@C@' F@' E@ B@C '
A1' >AAE ' ' J =E@' 1AC' =' @C = ?' D@ = ' =?E' D=C =C' D CDA @' F@'
DA @ A?' ' ' DDA @E' A' C@ E@' ?D=C @E' G F' ?' F@' 1 C

' "*B' .' +*/' AMY' AMY' .' +7O' ' GDG' .' 4 4' HD 5' 5' &
' M' HH' =' Y' G' +=4' ' ' 1' .Y' =' " B' '2' ' /*' HA' G' +=4' ' '2
.MN' "' YEG .Y' =' .MN' "' YEG
.' X+*/' AMY W+b' G' +=4' ' '1' .Y' =' .MN' "' YEG'
"C' /V' ' + ; //' ' ' ' ' ' ' ' YEE' .' +7O' ' ' 1' HH' =' G
HYE' <4=//' /)' 6' /#' .' /' ' ' RS' /V' ' ; 49' ' ' ' ' '
YMG' /)' ,' 4+'3<(#' ' 2V' ' IDH' ' ,' +(J/#' N' ' ' ' HA&



J/(4 ')' "(2]' "/(4#)< *4# 2& *+(1/'#

AC' A?B@C ' F@' =J@' A' F ' AG?' @' AC' F@% @' A1' =? ' D@C A?' A F@C' F=?' F@' AG?'C' F@C@A1%' = FA >F' F@' F= ' ?A ' IC@=<' I <' AC' A F@CG @' E@ @CJ ?@' F@' I= J@? %' F= ' I@' > ' A1' =C @? %' 6 #'&6''< ' 4 ! #' # " 4*' >E4 ' 6 '! #! & '*4"' 6" 'G <> ' <! ' !4 ' <6 ' 4 ' ? #' 4' 6 '' 4** ' E> ! <6 : ' 4 ' >&&6"'' 4 ! !4 P 1>3

36/14 2& 49/' 1*+<=/

F@' AIZ@ ' A1' F ' = @' G=' JD ' A' J=<@' FA @' = @' =C @? %' GF@C@' F@' >@?@C=' DCAD@C ' ?' F@' F ?>' E@ B@C@E' G=' ?@B@C' ? @?E@E' A' I@' D=C @E' G F'=' = %' I 'A? ' F@' E4 !4 G GF@C@%' ?' 1= %' F@' AG?@C' E@ B@C@E' F@' DCAD@C ' A' =?A F@C' ?E@C' F' C J =? @ ' = ' A' E@DC B@' F J @ 1' A1' F@' E# K!4 '1AC' AJ@' J@%' GF@ F@C' @C = ?' AC' ? @C = ?%' =?E' GF@ F@C' A?>@C' AC' FAC @C%' = ' F@' @]D C= A?' AC' E@ @CJ ?= A?' A1' GF F' J@' F@' B@C ' =J@' F ?>' F= ' F=E' I@@?' A' E@ B@C@E' G=' A' I@' C@ AC@E' A' F@' AG?@C' AC' E@ B@C@E' A' AJ@' A?@' @ @' ?' ACE@C%' F@C@1AC@%' A' IC ?>' =' = @' G F ?' F ' = @%' ?' =EE A?' A' F@' 1C= E @?' E DA =' A1' F@RDCAD@C %' J ' I@' DCAB@E%' %' F= ' F@C@' G=' F' =' E@ B@C ' A1' F@' DCAD@C ' = ' A' E B@ ' F@' AG?@C' A1' F@' E4 !4 ' =?E' B@ ' ' ?' F@' DC A?@C' 1AC' A? @' J@ ; -?E %' F= ' = ' F@' @]D C= A?' AC' E@ @CJ ?= A?' A1' F= ' J@%' F@' E@? = ' =J@' DCAD@C ' G=' A' I@' C@ AC@E' A' F@' AG?@C' AC' E@ B@C@E' A' AJ@' A?@' @ @' 5CAA1' A1' F@ @' 1= ' G ' I@' = ' F= ' ' ?@ @ =C ' ?E@C' F ' = @

9/(/' +' "/(P =2 '' =' '24

& F@C@' =' A ?' F=C>@E' F@' DC A?@C' G F' =C @?' A1' JA?@ ' = ' =' I= @@%' =?E' ' =DD@=C@E' F= ' F@' DCA @ AC' F=E' @JD A @E' F J' A' A @ ' A =?E ?>' E@I %' =?E' ?' F@' A C 'C1' F ' @JD A J@?' F@' DC A?@C' C@ @ B@E' F@' J ' ?' b @ A?' ; ' G=' F@ E' F=' F@' A ?' G=' ?A ' DCAB@E%' I@ = @' =' D@C A?' GFA' C@ @ B@E' JA?@ ' A?' I@F= 1' A1' =?A F@C' E E' ?A ' F@C@I ' I@ AJ@' =' I= @@' A1' F@' JA?@ %' ?A ' I@ ?>' IA ?E' A' F=?E' AB@C' F@' D=C =C' JA?@ ' GF F' F@' F=E' C@ @ B@E%' NBd

F@' 1C ' A ?' F=C>@E' F@' DC A?@C' = ' =' I= @@' G F' @= ?>' 9_' 9 ' ^ %' F@' @ A?E' G F' JD @' =C @? %' =?E' ' =DD@=C@E' F= ' F@' J' A1' 9 ' 9 ' #' A @ @E' ?' =' F C F' 1AC' F@' I@?@1 ' A1' F@' F C F' * A?=C ' A @ ' G= ' F=?E@E' A' F@' =C%' =?E' D= E' I ' F J' ? A' F ' AG?' I=?<;' I ?' A? @b @? @' A1' =' A?B@C = A?' G F' F@' DC A?@C%' GFA' G= ' F@' C= @%' ?' GF F' F@' =EB @E' F= ' ' FA E' I@' G FEC=G?%' =?E' D = @E' ?' F@' =B ?> %' I=?<%' GF@C@' ? @C@ ' GA E' I@' A I = ?@E%' =?E' = @E' F= ' F@' GA E' D = @' ' ?

R B' 49 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' GM ' C' 14 ' M' AI ' =' I' 49/' & (=4' 72(:=' '' 4+* 1=' 3/ ')' =<3=4 4<4/ :' &2(0"(2"/(4#'$ *492<)9' 49/(/' =' '2' :2<34' 49+4' +' "/(=2 '' ;)94' 9+J/' 3// '' 12 ' J 14/ :' 2&' +' #' 2&&/ ' 1/' 7 49 '' 49 =' 1*+<=/' 2 '' +' 12 ; ; 2 '' ' : 14P ; / ' 4' &2(*+(1/ '#' /) ' & ' +') 9 ' D 2V' ' ' IMH' +=' 4' /V"(/==*# / ' +14=' 49+4' 49/' 2&&/ ' : /(0=9+*#' 3/') < *4#' 2&' *+(1/ ' # $ #/4' 42' "(/J/ ' 4' +*#' :2<34' 4' =' "(2J :/ :' 49+4' 49/' 2&&/ ' : /(; +# 3/' 12 ' J 14/ :' 2 '' +'' ' P : 14 ; / ' 4' &2(*+(1/ '#' '' /) ' & ' 2*P : +' ' ' ' !' .DD' +' :2<34' 7+=' (+ =/ :' 79/49/(' +' 12<' 4' &2(/ ; 3/aa*/ ; / ' 4' +' :' +' 12<' 4' &2(// ' #' +=' +' 3+ */' 12<*:' 3/' 62 ' /:' ?9<L49/' "(2=/1<42(9+J ')' /*/14/ :' 42' "(21//:' 2 '' 49/' *+44/(12<' 4' 49/' 12 ' P J 14 2 '' 7+=' 9/*:' ( )94' 4' =' "*+ '' 49/(/ =' '2' 236/14 2 '' 42' 49/' 62 ' : /(2& 12<' 4=' &2(/ ; 3/aa*/ ; / ' 4' +' :' *+(1/ '#' +=' +' =/(P J+' 4' +' :' 2 '' 49/' *+44/(12<' 4' 49/(/' ;)94' 9/' +' 12 ' J 14 2 '' 2& *+(1/ '#' +=' +' 3+ */// ' 9/' "(2J =2' 7+=' '4(2 :<1/ :' 42' "(/J/ ' 4' 49/' 1*+<=/' +" "*# ')' 42' 49/' 1+=/=' 2& "/(=2 '=' / ; "*2#/ :' '' 49/' = *0' 722**/ ' ' +' :' 249/(; +' <&+14<(/=' 792' : ="2=/' 2&)22 :=' / ' 4(<=4/ :' 42' 49/ ; ' +' :' +(/' * +3*/' 42 9/' =< ; ; +(*#' 12 ' J 14/ :' <' :/(=<' :(# =4+4<4/=' ' ' ! // /) ' & ' +#' /=' .G 2V' ' ' A. I "&& /) ' ' 2+(/' ' L' ' L' YID')94 ; +' ' +' :' 2** 210' ' ' ' ' & ' +==+**' HM' ' ' ' ' .DA' ' ' ' AE' :/1 : /:' 3# 49/' 2<(4 2& "" /+*' '

.HD

F@' =B ?> H I=?<%' F@' B =C' >=B@' F J'=' F@b @'1AC' F@' =J A ?%' GF F' F@' DC A?@C' = F@E'= ' F@' I=?<';' I ' F@' JA?@ 'G= '?@B@C' D= E' ? A' @' =B ?> H I=?<' F@' JA?@ 'G= '?A 'D= =I @' A' F@' A @ ' ?' A?EA?' ? ' AJ@' J @'=1 @C'X F@'DC A?@C'G= '=DDC@ 'YF@?E@E' @' DC A?@C' = @E'= ' @ C@ =C '=?E' C@= ? @C'A1'=' A = ' A @ ' ?' A??@ A?' G F' F= ' ?' A?EA?' F@' B =C' F=E' ?A ' = @E' = ' C@= CNZC' & @ %' %' 7 F@' DC A?@C' ' F=C>@E' G F' = H @? ' = ' =' I= @@%' I ' F@' G= ' F@' = ?>' C@= C@C'A1' F@' A @ %' =?E'= ' F' 'G= 'F 'E ' A'E@DA 'AC' ?B@ ' F@'JA? @ 'C@ @ B@E%' =?E'F@'G= '?A 'C@N C@E' A' D= ' AB@C' F@' D@ 1 ' A ?' F= ' =J@' ? A'F=?E %' BZF ' '@ @? =' A'='I= J@? ' "AC' A E' F@' A ?' 1AC' =C @? 'I@' = ?@E%' I@ = @' F@' DC A?@C'G= '?A '=7 @CB=? %' =?E' F@'1 C 'DA @ b?'A1' F@' JA?@ 'G= ' =' =G1 ' A?@' @'G= ' A? ' B ' =I @H1AC'F 'E@1= H NGd

& F@C@' F@'DC A?@C%'GFA'G= '='C @@'A1'='1C @?E ' A @ %'G= ' =DDA ? @E' I '='C@ A A?'A1' F@' A @ ' A'C@ @ B@' JA?@ '1CAJ' F@' C@= C@C%'=?E' A' =CC ' ' A' F@'I=?<';' =?E'F@'C@ @ B@E' F@' JA?@ ' 1CAJ' F@' C@= C@CH' @C<%' I '=DD @E' ' A'F ' AG?' D CDA @ ' ?T @=E'A1' =< ?>' ' A' F@'I=?<;' 'G= 'F@ E' F= 'F@' A E' ?A ' I@' A?B @E'A1' =C @? 'A1' F@' JA?@ '= ' ='I= @@%' 1?3

& F@C@' F@' DC A?@C' C@DC@ @? @E' F= 'F@'G= ' @ ?>' FAC @ '1AC' =?A F@C' D@C A?%'=?E' F=E' ?A' = FAC ' A' @ 1' F@J'1AC' @ ' F=?' A %'=?E' AI = ?@E' F= ' J'1AC' F@J %'=?E' '=DD@=C@E' F= 'F@' F=E' IA >F ' F@' AC @ '1AC' _ %' FA >F' F@' C@DC@ @? @E' F= 'F@' G= ' A!D= ' 8 '1AC' F@J';' 'G= ' A? @?E@E' F= ' 1'='D@C A?' I '=' 1= @' = @J@? ' ?E 41 x '=?A F@C' A' ? C 'F J'G F'DCAD@C ' A' I@' > B@?' A' =' F CE'D@C A?%' F@' G= '?A ' F@' @ '='I= @@';' 1AC'F@' A E' ?A ' =<@'=EB=? =>@'A1'F 'AG?'1C= E';' 'G= '=? G@C@E%' F= ' A' A?T @'='I= J@? ' F@C@' J 'I@'='E@ B@C 'A1'=' F ?>' ?' C '1AC' AJ@' D@ = ' AIZ@ ' AC'D CDA @%' =?E%' DA?' =' A? C= %'@]DC@ ' AC' JD @E%' A' A?1ACJ' A' F@'AIZ@ 'AC'D CDA @'A1' F@' C ';' =?E' F= ' F@'DC A?@C' G= '?A '='I= @@'1AC' F@'D C F= @C%'A1' F@' @] @ 'AB@C' F@' ';' 1AC' F@'D C F= @C'D= E'=G= ' F= 'JA?@ %'?@B@C'@]D@ T ?>' ' A' I@' C@ C?@E;' =?E' F@' DC A?@C' A E'?A 'I@'='I= @@'A1' ' F= ' J'1AC' F@'B@?EAC';' =?E' 'G= 'F@ E' F= ' F@C@'G= '?A' I= T J@? ' ?' F ' = @%' R5B

F@' DC A?@C'G= '1C@b @? '@JD A @E'I ' F@'DCA @ AC' A'1@ F' A= '1CAJ' ' @1AC@'@= F'ZA C?@ ' F@'DCA @ AC' J=E@' D' A' F@' DC A?@C' R 'A 'A1'GF F' F@'G= ' A' D= '1AC' F@' A= %'<@@D'- ' 1AC' F J @ 1%' =?E' 1' F@' DC @'A1' F@' A= %'G F' F@' - %'E E'?A ' =JA ?' A' -:_ %' A' <@@D' F@'I= =? @' ?'F=?E' A' F@' C@E 'A1' F@' ?@] 'ZA C?@ ' 'G= ' F@'DC A?@CH'E ' A'D= '1AC' F@' A= %'= 'F@' AI = ?@E' %'G F' F@' JA?@ 'C@ @ B@E'1CAJ' F@' DCA @ AC%'=?E' F@' DCA @ AC'E E' ?A '<?AG'I ' F= 'F@'E E' A';' I 'DCAB E@E F@'G= ' DD @E'G F' A= %'=?E' ?A 'C@b C@E' A'D= 'JAC@' F=?' F@' DCAD@C' DC @' 1AC' %' 'G= ' J J=@C = ' A' F@'DCA @ AC' ?' GF= ' J=??@C

W61b' 1U' I.' !+((/44' E' 2V' M ' 'HYE' U **/=' ' =+ :' 49+4' #*/=' ' +' :' 9 ; P =/*&' 9+:' "(/J 2<=*#' :2/ :/:' '' 49/'=+ ;' 7+#' '' +' = ; *+(' 1+=/' 9/(/' 7+=' '2' 3+ * ; /'4' / 49/(' 2& 49/' 19/T</' 2(' ; 2'/#' '' 4* =' 1+=/' ? &2(' '/ 49/(' 7+=' '4/' : /:' 42' 3/' (/4<('/:' '' ="/1 /'+' :' 49/' "(2"/(4#' '' 3249' 7+=' "+(4/:' 7 49' +4' 49/' 4 ; /' 2& 49/

: /* J/(#' 42' 49/' "(=2'/(' /)' ' %' /**' ' ' GAN "5B' /)' ' <'4' E' 2V' ' ' INA' 9/' /12(:/(' 9/' ': 14 ; /'4' 7+=' &2(' 234+ ' ')' 49/' /V1/==' 2J/(' 49/' ..M.' 3#' &+*=/' "(/4/'1/=' 4' =' '2' =4+4(& 79/49/(' 49/' "(=2'/(' 32<)94' 49/' 92(=/%' 3/&2(/' 2(' +&4/(' 49/' =+*/' 42' 49/' "(2=/1<42(

F@' DC A?@C' D= E' 1AC' ' ?' F@' - F' * =C F' F@' DC A?@C' F=E' =' I= =? @' A1' /' ?' F=?E% =?E' F@' DCA @ AC' >=B@' F J' - /' A' J =<@' D' -:_' 1AC' F@' ?@] 'ZA C?@ ' F@' DC A?@C' E E' ?A ' F@?' I '=? ' A= % I '1C= E @? '=DDCADC = @E' F@' J A?@ ' @ E' F= '=' A?T B A?' A1' F@' DC A?@C' 1AC' =' =C @? 'A1' F@' - _' = ' =' I= @@' G= ' C >F % N=d

?' 9 % ?' - 'B' M6 ! ' F@' 1A AG ?>' = @' ZB= ' = @E' I ' * C' & @ % W' % (@ ACE@C' A1' F@' * =? F@ @C' '!' @ A? % 1AC' F@' AD ? A?' A1' F@' A C 'A1' C J ?= ' DD@= '$ ` F@' DC A?@C' G= ' C @E' I@1AC@' J @'!= ' F@' W =C @C' @ A? '1AC' F@' 4' A1' * =? F@ @C' A?' F@' : F' E= ' A1' DC % 9 ' F@' ?E J @?' F=C>@E' F J' G F' @= ?>' GA' A=E ' A1' A= % F@' DCAD@C ' A1' ?EC@G' #A I I @' =?E' =?A F@C ' F@' DC A?@C' G= ' =' =C @C% =?E' G> ' @?>=>@E' I '#A I I @' A' E@ B@C' ?' F ' =C ' =' I A= H ' =C>A' A1' A= ' 11A @C = ?' D@C A? ' ?= J @E' ?' =' ' GF F' G= ' F=?E@E' A' F@' DC A?@C% =?E' F@' G= ' ?A ' = FAC K@E' A' E@ B@C' A= ' A' =? 'D@C A?' GFA @' ?= J @' G= ' ?A ' A? = ?@E' ?' F= ' ' GA' A1' F@' A=E ' A1' A= ' F@' 1C= E @? ' A E' A' D@C A? ' ?A ' ?' F@' % ` 1AC' A?@' A1' F@ J ' F@' A I = ?@E' - ' ' E E' ?A ' =DD@=C' FAG' J F' F@' C@ @ B@E' 1AC' F@' A F@C ' DA?' F@ @' 1= ' 'G= ' A? @?E@E' I ' F@' A ? @ '1AC' F@' DC A?@C' F= ' F@' A E' ?A ' I@' A?B @E' ?E@C' -:' ,' -8' 3 @ ' ' % ' % = ' 'G= ' @=C' F= ' F@' DCAD@C 'G= ' ?@B@C' A' I@' C@ AC@E' A' F@' AG?@C% GFA' F=E' @? C @E' ' A' F@' DC A?@C% =?E' GFA' G= ' F@C@1AC@' ?A ' =' I= @@' G F ?' F@' J @=? ?>' A1' F= ' ';' =?E' F@ ' @E' - 2' B% = 6 6 ' ' @ >F' =?E' =B@H ' (@DAC % D ' 89 ' % FAG@B@C% E C@ @E' F@' Z C ' F= ' 1' F@' A= ' G@C@' @? C @E' ! D!< ' DC A?@C' 1AC' F@' D@ 1 ' D CDA @' F= ' F@ ' FA E' I@' E@ B@C@E' I ' F J' A' F@' D@C A? ' ?= J @E' ?' F@' % =?E' F= ' F@% ? @=E' A1' A' E@ B@C ?>% 1C= E @? ' A?B@C @E' F@ J ' A' F 'AG?' @% F= ' F@' DC A?@C' A >F ' A' I@' 1A ?E' > ' F@' Z C '1A ?E' F@' DC A?@C' > ';' =?E' ' @ ' F J ' A ' A?' I= ' ? ' F@' AD ? A?' A1' F@' A C '1AC' CAG?' = @ ' (@ @CB@E' G= ' =<@?' DA?' F@' DCADC @ 'A1' F@' A?B A?' F@' A C 'A1' C J ?= ' DD@= ' =11 C J @E' F@' A?B A?' N d

F@' DCA @ AC' = <@E' F@' DC A?@CR' A' I C ?>' F J' F= 1' =' A?' A1' A= '1CA J' F@' C= G= ' A= ' = A?% =1 E' >=B@' F@' DC A?@C' 9 ' #' A' D= '1AC' F@ J ' F@' DC A?@C' I A >F ' F= 1' =' A?' A1' A= '=' F@' = A?' ?' * ' AG?' ?=J @% D= ?>' 9 % I ' F=B ?>' C@E ' 1AC' F@' C@ J = ? ?>' E' @' F@?' D ' F@' A= ' ? A' F ' AG?' =C % =?E' A?' F ' G= ' =I C= @E' =' F ?EC@EG@ >F 'A1' F@' A= % =?E' =1 @CG=CE ' E@ B@C@E' F@' C@ E @' A' F@' DCA @ AC' = ' F@' A= ' G!F F' F@' F=E' C@b C@E ' F@' DC A?@C' G= '?A ' ?' F@' DCA @ ACH' @ J D A J @? ' @ E% F= ' F@' DC A?@C' G= ' > 'A1' =C @? '=' =' I= @@' ?E@C' F@' -:' ,' -8' 3 @ ' ' % ' % A J @' A1' F@' E>@ ' F ?< ?>' F= ' F@' A= ' I@ ?> D C F= @E' G F' J A?@ ' > B@?' I ' F@' DCA @ AC' 1AC' F= ' @] D H@ 'D CDA @% F@' DCAD@C ' ?' F@' A= 'B@ @E' ?' F@' DCA @ AC' A?' F@' D C F= @';' A F@C ' FA E ?>' F= ' A' J =<@' F@' DC A?@C' =' I= @@' F@C@' J 'I@' @B E@? @' A1' =' D@ 1 '=DDCADC = A?' A1' F@' A= ' A' F@' DCA @ AC' Ó =?E' = ' F@' A C '=>C@@E% F= ' F@C@' G= ' @B E@? @' A?' F@' 1= ' A1' F' =?' =DDCADC = A?' G 1 3' ' E "' A <I C?%

"\B' /)' ' :/ ' .G' 2V' ' ' .G' +J =' .M 2V' ' ' GHN
/' ' [/'=' .' L' ' L' .MN W1Ó ' ' <' O+* ' HH' ' ' ' ' DA
W{Ó ' (' /=4' ' //' ' &

8 'D 5 $% &' '

G= ' =' A? C= %' =?E' F= ' F@' DC A?@C%' I@ ?>' =' J =CC @E' GAJ=?%'
A E' ?A ' A? C= ' 1AC' F@C @ 1%' =?E' F= ' F@' F I=?E' G= ' F@'
I= @@ ' F= ' F@' A E' ?A ' I@' A?B @E' A1' =C @? %' A?' F@' >CA ?E'
F= ' F@' ICA<@' I <%' 1AC' F= ' ?@ @ =C ' J DAC @E' =' I= J@? '
' ' G= ' F@ E' F= ' @ F@C' F@' G= ' =' I= @@%' =?E' > ' A?' F@' 1 C@'
A ? %' AC' F@' G= ' ?A ' =' I= @@%' =?E' F@?' F@' G= ' > ' A?' F@'
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+ * ; /9f 2& +'
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' & F@C@' A?' =?' ?E J @? ' 1AC' =C @? %' F@' DCA @ AC' DCAB@E'
F= ' I@ ?>' AJ@GF= ' D %' F@' = ' A?' F@' >CA ?E%' D=C ' = @@D%'
=?E' GF @' ?' F= ' = @' =G' F@' DC A?@C' =<@' (' G= F' A ' A1' F '
DA <@ %' GF F' I@' AA<' ?A' @D ' A' DC@B@? %' I@ @B ?>' F= ' F@'
DC A?@C%' G F' GFAJ ' F@' F=E' I@@?' = b = ? @E' 1AC' AJ@' J@%' G= '
= ?>' A @ ' 1CA J ' 1C @?E ' J A B@ ' ;' =?E' Z@' DC A?@C' =1 @CG=CE '
A11@C@E' F@' G= F' 1AC' = @;' ' G= ' AIZ@ @E' F= %' F@C@' G= ' ?A'
C@ D= %' =?E' A? @b @? ' ?A' =C @? ;' CAGE@C%' %' 7 F ' @B T
E@? @' GA E' ?A ' DDAC ' =' F=C>@' A1' =C @? ' = ' AJ JA?' =G%' I '
F@' @B E@? @' E A @ ' =' I= J @? ' 11 @? ' A' IC ?>' F@' = @' G F ?'
F@' - ' ,' - ' 3 @ ' '8 :%' ' :%' 1' F@' Z C ' =C@' = 1 @E' A?' F@'
1= H R3B

(+J/**/(' ' C=B@ @C' G= ' @? C @E' G F' D @ @ ' A1' <' A' =CC ' =IA ' G F'
4(<=4/ :' 7 49' F ?=' 1AC' = @' A' F' AJ @C ' = ' F@' J >F ' DCA C@' ' G= ' F '
)22 :=' &2(' =+*/ E ' A' @?E' I ' F@' ?@] ' DA ' =1 @C' = @' F@' ?= J @ ' =?E' =EEC@ @ '
A1' F@' AJ @C ' A' GFA J ' =? ' <' J >F ' F=B@' I@@D' A E' '>AAE '
?A ' A' = A ? @E' 1AC' C@ J = ?@E' ?' F ' F=?E %' =?E' G@C@' C@= @E' I ' F '
@ J D A @C ' = ' A < ' ' F@' @?E' A1' @= F' F= 1' @=C' ' G= ' I ' E '
A' @?E' ?' =?' = A ? ' 1AC' F@' @? C@']' J A ' %' =?E' A' C@ C?' F@'
? A E' <%' @' G= ' D= E' I ' =' AJ J A?' & F ?']' J A? F '
=1 @C' 1A C' D @ @ ' A1' <' F=E' I @@?' E@ B@C@E' A' F J %' Z;F@' DC A?@C'
C@?E@C@E' =?' = A ? ' A1' F@' = J @%' =?E' @? @C@E' F@ J ' = ' A E' A' GA'
D@C A? %' G 1F' ? C A? ' A' F ' @ J D A @C ' A' @?E' ?BA @ ' A' F@'
= @>@E' @ AJ @C ' ' C?@E' A ' F= ' F ' G= ' 1= @%' =?E' F= ' F@'
F=E' =DDCADC = @E' F@' <' A' F ' AG?' @' 'G= ' F@ E' F= ' F@'
A E' I@' DCAD@C %' A?B @E' A1' =C @? ' = ' =' I= @@%' I@ = @' F@'
<%' ? ' E DA @E' A1' A' AJ L %' G= ' F@' DCAD@C %' A1' F '
@ J D A @C ' I!3

!' E@ B@C@E' GA' ICAA F@ ' A' F@' DC A?@C' A' @ ' 1AC' F J' = ' - _'
1AC' A?@' =?E' A ' 1AC' F@' A F@C%' =?E' F@' DC A?@C' G= ' A' F=B@

Ww ' * /) ' J' 2 * ' ' ' M ' ' NH'
+(4 ' ' ' 7+=' 2&' 2" ' 2 '' =9/' 7+='
+' 3+ */!' +' :' =+ :' 49/(/' 7+=' +' *+4/' 1+=/ ' ''
49/' 2 ' ' 2 '' */+=' '' 7 9 19' 4' 7+=' 9/*:'
49+4' +' 12 '4(+14' 7+=' ' 24' /==/ ' 4 +'' 42' +'
9+ *4 ' /' 4' +' :' 49+4' 4' +=' ; ; +4/(+'
7 9/49/('49/(/' +=' +' J+* :' 12 ' 4(+14' 2(' ' 24?
+' :' 2**210' ' ' 7+=' : ="2=/ :' 42' 32' 2&'
49/' =+ ; /' 2" ' 2 ' ' +(')' 49/' +()< ; / ' 4'
)94 ; +' ' ' =+ : ' 0 <""2=/' =9/' 9+ :'
4+0/ '' +' +419' */&4' 3#' +' *h0 :)2(2 '' 9 =
4+3*/ ' +' :' 9+ :' ' 24' +4' 49/' ; 2 ; / ' 4' 49/'
' 4/ ' 4 2 '' 2&' +"" (2" (+4 ')' 4 ' 3<4' : :'
+"" (2" (+4/' 4' =<3=/T</ ' 4*#' ? 2<*:' =9/'
' 24' 32' 7 49 '' 49/' =4+4<4/' ' 2 ; /' 2&' 49/'
2<(4 =// ; ' 42' 9+J/' 492 ') 94' 49+4 ' &' 49/'
" (=2 ' /(' 7+=' ' 24' +' 3+ */ ' =9/' 7+=' '' 49/'
=+ ; /' "2T6& 2 '' +=' +' =4(+ ')/(' +' :' +=' +'
=4(+ ')/(' 792' 9+ :' =42*/ '' 49/' : 2 ' /#
2<*:' 1*/+(*#3/')< *4#' 2&*+(1/ ' #' =2' 7+=
49/' " (=2 ' /(' 9 =' 1+=/' 2J/((<*/=' /) ' &<
/ ' ; 2<(' E 2V' ' ' IIM ' 79/(/' 49/'
" (=2 ' /(' 7 92' 7/(/' 9<=3+ ' :' +' :' 7 &/ '
7/(/' ' : 14/ :' &2(' *+(1/ '# +=' 3+ */!=' 2&
1*249/=' 9/' " (2=/1<4(V 9+ :') 2 ' /' 42'
49/ (' 92<=/? +' :' 49/#' 2&&/(/ :' 42' 4+0/' 1+(/'
2&' 9/(' 1*249/=' +' :' =9/' +11/ "4/ :' 49/ (' 2&&/(' 72' : +#=' +&4/(7+(:=' =9/' :/ '
; +' : / :' 9/(' 1*249/=' +' :' 4' 4<(' / :' 2<4'
49+4' =2 ; /' 2&' 49/ ; ' 9+ :' 3// '' =2*:' +' :'
=2 ; /' 6_+7 ' / :' 3#' 49/' 7 &/' +*2 ' /' ? +' :'
+(4 '6 ' 9/*:' 49+4' +' 7 &/' 12<*:' ' 24' 3/'
3+ */!' +' :' 49/' 9<=3+ ' :' 7+=' ' 24' "(2J/ :'
42' 9+J/' 4+0/ '' +' #' "+(4 '' 49/' +*/) / :'
12 ' J/(= 2 ' ' +' :' : (/14/ :' +'' ++T< 44+*'
/ 2J2*' . ' "' . IA
"3&' /) ' : //J/=' A' <(=4 ' D. Y
" &' /) ' : 19 ; 2 ' : ' .G 2V' ' '
' INA

J ' I @' =<@?' A' F=B@' 1A ?E' F= ' F@' E E' ?A ' ? @?E' A' C@DA @ ' F J @ 1'A1' F @ J ;' F@' = ' A1' = @' G= ' F@C@1AC@' ?' @ 1'=' 1C= E @?' =DD ?>' A1' F@' ICAA F@ ' A' I ' AG?' @% =?E' =' =C @? ' G F ?' F@' = @ ' F@' b @ A?' C@ @CB@E' 1AC' ' = J @ ' AJ @ F ?>' GF F' '?A ' F@' = @$ F= ' F@' DC A?@C' G= ' ?A ' IA ?E' A' C@ AC@' F@' D@ 1 ' =C @ % GF@C@= ' =1 @C' F@' @?' E= ' F=E' @ =D @E' F@' G= ' IA ?E' A' C@ C?' F@' D@ 1 ' ICAA F@ ' A' F@' DCA @ AC

J : / ' 1/' 2& 12' J/(= 2 ']

?' =?' ?E J @? ' 1AC' =C @? ' = ' =' I= @@' ' DD@=C@E' F= ' F@' DC A?@C' IACCAG@E' =' A= ' 1CA J ' F@' DCA @ AC% G F' GFAJ ' F@' AE>@E% 1AC' =' E= % =?E' C@ C?@E' ' FC@@' E= '' =1 @CG=CE ' F@' AA<' ' G FA ' F@' DCA @ ACH ' D@C J A?% =?E' G= ' @@?' G@=C ?>' ' I ' F J % =?E' F@' =>= ?' >=B@' F J ' D@C J A?' A' G@=C' ' 1AC' F@' E= ' AJ @' 1@G' E= ' =1 @CG=CE ' F@' @1 ' F@' AG?% =?E' G= ' 1A ?E' G@=C ?>' F@' A= ' A?' IA=CE' =' F D' IA ?E' 1AC' C= = ' ' =C ?% % ADD@E' F@' = @% = ?>' F= ' ?' F ' AD ? A?' F@C@' G= ' ?A' @B E@? @' A1' =' A?B@C A?' F@C@' =C@' J =? ' ? =? @ ' A1' A?B@C A?' 11 @?' A' J = ? = ?' =?' = A?' A1' CAB@C% GF F' GA E' ?A ' I@' 11 @?' A' DT DAC ' =' A?B A?' ?E@C' F ' = @' ;' F@' E@ @CJ ?= A?' A1' F@' I= J @?' J ' I@' AJ @ F ?>' =?= A>A ' A' =C @? % =?E' AJ@' = ' J ' I@' EA?@' ? A? @?' G F' F@' D CDA @ ' A1' F@' I= J @?' ' % 1AC' ? =? @% ?' F@' = @' A1' =' I= J @?' A1' =?' =C @' A1' B@C' 1AC' @% J @ ?>' ' GA E' I@' @B E@? @' A1' A?B@C A?' A' GF@?' JA?@ ' AC' =' ?@>A =I @' @ C ' ' I= @E' A' =' D@C A?' 1AC' =1@' <@@D ?>% 1' F@' D@?E' F@' JA?@ ' AC' A?B@C ' F@' @ C ' F@' ' > ' A1' =' A?T B@C A?' G F ?' F ' = @' F@' DCA @ A?' A >F ' A' 1 ?E' AJ@' E@1 ? @' J @' = ' GF F' F@' A11@? @' G= ' AJ J @E' ;' F@' =< ?>' F@' A= ' A?' IA=CE' F D' G= ' I @b @? ' A' F@' DC A?@CH '>A ?>' A? IA=CE' F J @ 1% 1<3

9/(/' "(=2 ' /(' 3/* /J/ :' 9/' 9+ :' +<492(4# 42' =/**

& F@C@' F@' DC A?@C' G= ' ?E @E' 1AC' @= ?>' F@@D% =?E' F@' DCA @ AC' F=E' E@ B@C@E' F@' F@@D' A' F@' DC A?@C' A' <@@D% =?E' F@' F=E' =1 @CG=CE ' A E' F@ J % =?E' 1AC' AJ @' J @' A? @= @E' F@' = @ ;' =?E' F@' E@1@? @' G= ' F= ' F@' DC A?@C' F=E% AC' DDA @E' F@' F=E% = FAC ' 1CA J ' F@' DCA @ AC' A' @ ' F@' F@@D' ;' C @% ' % A E' F@' Z C ' F= % 7 1' F@' DC A?@C' A E' F@' F@@D' G FA ' =? ' = FAC ' =?E' G FA ' =? ' C@= A?' A' DDA @' F= ' F@' F=E' = FAT C ' A' @ ' F@ J % F@?' F@' G= ' > ; A F@CG @% ?A ' A' ;H =?E' @1 ' ! ' A' F@ J ' A' = ' GF@ F@C' F@' F=E' =? ' C@= A?' A' DDA @' F@' F=E' F' = FAC ' 1D3

":B /) ' , ' +10=2 ' ' N 2V' ' ' AMA' &' 49 =' 1+=/' =' 12((/14*# (/"2(4/ : ' 4' : /=/(J/=' (/12 ' = : / (+4 2 ' ' 9/' 72(: =' +(/' 0 : ' 2(& ' 49/' =+ ; /' 42' 9 =' 27 '' <=/ ' / $ 9/' 1*+<=/' 49/(/&2(/' : 2/=' ' 24' (/P T< (/' +' 2 ' J/(= 2 ' ' 3<4' 7+=' =4<: 2<=*# &(+ ; / :' 42' +J2 :' 49/' ' /1/== 4# 2& "(2J ')' 2 ' / ' 9/' /J : / ' 1/' 7+=' =<&& 1 / ' 4' 42')2' 42' 49/' 6<(# 49+4' 49/' "(=2 ' /(' 4220' 49/' 12+4' 2 '' 32+(:' &2(' 9 =' 27 '' <=/' 7 49' ' 4/ ' 4

"/(; + ' / ' 4*# 42' : /"(J/' 49/' 27 ' /(' 2& 4? +' :' =<19' +' 1+=/' =// ; =' 1*/+(*# 7 49 '' 49/' =4+4<4/ ' /= : /=' 49/' 1+=/' 2<) 94' 42' 9+J/' 3// '' */&4' 42' 49/' 6<(# 42' =+# 79/49/(' 9/' : :' ' 24' (/4<(' '49/' 12+4' 42' 49/' "(2=/1<42(S=' 92<=/' +&4/(' 49/' / ' :' 2& 49/' *+=4' 3+ * ; / ' 4' &2(' +' : +# &' =2' 49/' 1+=/' 7+=' = ; "*# 2 ' / ' 2&' *+(1/ ' #' ' ' ! ' // ' &' //0=' .N 2V' GGI "IB /) ' ' /""+(: ' I' L ' ' L ' A.

J+'4 ' ;N ' ' ` 5' 3# +11/"4 ')' <2* "+# ; / '4 += K7+= 2 &/(+ ; ' 492<)*' 9 = ; +=4/(' : :' '24 '4/ ' :'4'") J/' 49/' "(=2 ' /(1(/ : 4

F@' E 11@C@? @' I@ G@@?' F= ' J' =?E' F@' = J A ? ' A1' F@' GA' I ; DA?' YGF F' F@' DC A?@C' = E' F= ' '!&=' J J = @C = %' F= ' F@' FA E' & =? ' J AC@' >AAE %' =?E' F= ' F@' GA E!' = ' A?' F@' @? ?>' E= ' = ' F ' A= @CH %' A' AA<' A 'A F@C' >AAE %' =?E' =<@' F@' F=?>@ ' DA?' F ' F@' FAD J =?' @1 ' F@' >AAE %' =?E' C@ C?@E' FA J @' G F' F@' I ' F@' DC A?@C' ?@!3@C' = J @' =>= ?' A' * C ' & A?H ' G=C@FA @; F@' I ' DA?' I@ ?>' DC@ @? @E' = ' = AC' =?E' A H %' C?@E' A ' A' I@' J@C@' 1=I C = A? ; =?E%' A?' ?b C ' = ' " A ' %' C=I@ <] CAG%' ' =DD@=C@E' F= ' F@' DC A?@C' F=E' A? ' I=C>= ?@E' 1AC' F@' AE> ?> ' F@' =J@' ?A1? ?>%' =?E' F= ' F@' =I A?E@E' G F' F@' >AAER' ?' =' 1@G' J ? @ ' =1 @C' * C ' & A?H ' FAD J =?' F=E' @1 ' F@' FA @ ' g' ' G= ' = A' DCAB@E' F= %' G F ?' =' J A? F' =1 @C' F@' >AAE ' F=E' I@@?' A' AI = ?@E' I ' F@' DC A?@C%' F@' @? C ! F= ' F=E' I@@?' J =E@' ?' F@' E= IAA<' G= ' AD @E' ? A' F@' ZA C?= %' =?E' 1CA J' F@? @' D 1 @E C@> =C ' ? A' F@' @E>@C%' ?' F@' = ' G= ' GF@C@' >AAE ' G@C@' ?A ' D= E' 1AC' J J @E = @ ; =?E' F= ' F@' DC A?@C' ' AAE' E@I @E' ?' F@' @E>@C' 1AC' F@' = J A ? ' ' G= ' AIZ@ @E%' 1AC' F@' DC A?@C%' F= ' F@C@' G= ' =' = @' A1' F@' >AAE ' A' F J %' =?E' F' =' E@ B@C ' = ' GA E' <6 2 ' ' *"4 ' E " ' ' DA?' GF F' F@' @=C?@E' E>@%' I ' GFA J' F@' DC A?@C' G= ' C @E%' @1 ' ' A' F@' Z C ' A' A? E@C' GF@ F@C' F@C@' G= ' ?A %' ?' F@' J ?E' 1' F@' DC A?@C%' = ' F@' B@C ' I@> ?? ?>' A1' F ' C=? = A?%' =?' ? @? A?' =?E' DC@ J @E = @E' D =?' A' AI = ?' F@' >AAE ' G FA ' D= ?>' 1AC' F@ J ' ; =?E' = A' GF@ F@C' F ' G= ' =' = @' I ' * C ' & A?%' =?E' =' E@ B@C ' A1' F@' >AAE %' G F' ? @? ' A' D=C ' !& F' F@' (E"4(E " ' ' F@' F=B ?>' C@ @ B@E' I=E' I ' ?' D= J @? ' 1AC' F@ J %' FCA >F' F@' J @E J ' A1' F ' FAD J =? ' F@' Z C ' G@C@' A1' AD ? A?' F= ' F@' DC A?@C%' 1CA J ' 1 C ' A' = %' ? @?E@E!' A' E@1C= E' * C ' & A?; =?E' F= ' ' G= ' ?A ' * C ' & A?H ' ? @? A?' A' > B@' F J' C@E ; =?E' F@ ' 1A ?E' F J ' > ' %' DA?' =' = @' C@ @CB@E%' F@' E>@ ' G@C@' A1' AD ? A?' F= ' F@' A?B A?' G= ' 5 "4 2G' 1AC' F= ' * C ' & A?' F=E' E6" #' 5 ! <' < ' E"4E " ' ' = ' G@ ' = ' F@' DA @ A?%' DA?' C@ @ B ?>' F= ' GF F' G= ' = @D @E' I ' F ' @CB=? ' = ' D= T J @? %' = FA >F' F@' I ' C?@E' A ' =1 @CG=CE ' A' I@' A1' ?A' B= @%' NAd

9/' "(/+/1<42(9+J ')' 3// '' 'J/)*/ :' 3# =9+(" /= 42' 3/4 7 49' 49/ ; ' +' :' =<&&/ (/ :' 3#' 49/ ; ' 42' 7 '' '' 49/' & (=4 ' '=4+ '1/ ' 7+= +&4/ (7+(: = =4("'" / :' 2& +' *+()' =< '' 3# *2= ')' +' 3/4 ' +' :' 49/' 792*/' 4(+ ' =+14 2 '' 7+= &2< ' :' 3# 49/' 6<(# 42' 9+J/' 3// '' +' "(/12 ' 1/ (4/ :' =19/ ; ' 42') /4 49/' "(2=/1<' 42(' ; 2 ' /#th 3<4 4' 7+=

DA?' =?' ?E J @? ' =>= ? ' " FA A?%' A?@ %' =?E' F=DD@ %' 1AC' @= ?>' =' I=?<' DA ' I ' 1AC' G@? ' DA ?E %' =?A F@C' 1AC' 1 1 @@?' ! DA ?E %' =?E' = A' @B@?' > ?@= %' F@' DCAD@C ' A1' & ' =C GC >F %' ' =DD@=C@E' F= ' " FA A?' ? CAE @E' F J @ 1' A' F@' DCA @ AC%' GFA' G= ' =' D@? A?@C' ?' F@' F=C @C FA @%' I ' AJ ?>' A' F ' =D=C T J @? ' = ' F= ' D = @%' =?E' DC@ @?E ?>' A' @?b C@' = ' A' F@' C @ ' A1' F@' F=C ' @' F=E' ?A ' I @1AC@' F= ' J @' =? ' AC 'A1' = b = ? =? @' G F' F@' DCA @ AC%' I ' F@' @@E@E' ?' >@ ?>' F J' A' @? @C' ? A' A?B@C = A?%' =?E' A' DCAE @' F@' C @ ' A1' F@' F=C ' 1CAJ ' F ' E@ <%' GF F' >=B@' " FA A?' =?' ADDAC ? ' A1' @@ ?>' F= ' F@' DCA @ AC' F=E' AJ @' JA?@ ' " FA A?' F@?' DCADA @E' A' F@' DCA @ AC' F= ' F@ ' FA E' =<@' =' G= <' A>@ F@C%' GF F' F@ ' E E%' =?E' G@? ' A' =' D I FA @%' GF@C@' F@ ' G@C@' ZA ?@E' I ' F=DD@ ' AJ @' b AC' G= ' = @E' 1AC%' GF@?' A?@ ' =J @' ? A' F@' CAAJ %' =?E' = E' F= ' F@' F=E' Z ' AJ @' 1CAJ ' AB@? C %' 1AC' F@' D CDA @' A1' C@ @ B ?>' =' =C>@' @>= %' =?E' DCAE @E' =' b =? ' A1' D=D@C %' <@' I=?<' ?A @ ; DA?' GF F' F=DD@ ' = E' A' F J %' 7 @%' ' @@' '

W2d +(O/=S= 1+=/' G +=4' ' ' 1' .Y' /+1* ' Y.I' // /V(' ; +**' E !' ' ' =' .YH' "' YD.' +1:2'+*:' ' ' G IY'

1 S &' ' ' H ' 8N ' ' N ' 5 ' .IA

>AAE%' I ' ' J => ?@' A ' F ?<' ?AIAE %' ?' AJD=? %'F= ' >A ' =? ' A ?'?A' A'
JA?@ ' I ' A C @ 1;H A' YGF F' A?@ ' =? G@C@E%'7 ' G ' = ' @?' IA'=1@A?A '
DA ?E %' F= ' ?@ F@C' A1' A ' FA%G' 1AC ' DA ?E ' ?' FC@@' FA C H
J J @E = @ 'A?' F ' I@ ' I@ ?>' DCADA @E%' F@' D=C @ ' @1 ' F@' CAAJ' ;' D=C @E' G F'
=?E' " FA A?' =?E' F=DD@ ' IA F' = <@E' F@' DCA @ AC' 1' F@' A E' 7I@E"4E " " ?
FAG' 1AC ' DA ?E %' A' GF F' F@' =? G@C@E' F= ' F@' I@ @B@E' F@' ?E !!=?'HE@='
A E' " FA A?' F@?' = AJD=? @E' F@' DCA @ AC' A' F ' CAAJ%' F=' 'F=E'
= ' F@' F=C @C F1 @%' GF@C@' F@' DCA @ AC' AA<' A ' A1' F 'E@ <' I@@?1=C '
F@' GA' DA ' I ' ?' b @ A?%' =?E' 1 B@' > ?@= %' =?E' =1 @CG=CE '
AA<' A ' GA' JAC@'' > ?@= %' DA?' " FA A?' =EB ?>' F J ' A' =<@'
=' > ?@=' AC' ''GA7J AC@;' =?E' F@ ' F@?' G@? ' A>@ F@C' A' =?A F@C'
D I FA @%' = @E' F@' DA @E' AC @%' GF@C@' F=DD@ ' F=E' DC@T
B A ' = E%' A?' F@ C' @=B ?>' F@' 1 C 'D I FA @%' F= 'F@' FA E'
>A;' =?E' GF@C@' F@ '1 ?E' IA F' A?@ ' =?E' F=DD@ ' ?' =' I= <' CAAJ
A?@ ' D ' EAG?' =' D=D@C%' =DD=C@? ' =' _' ?A @%' 1AC' @= F' GFA'
A E' FAG' 1AC ' DA ?E %' DA?' GF F' F@' DCA @ AC' FAG@E' F '
1AC ' DA ?E %' ?' F@' DA ' I ' =?E' > ?@= %' I ' = ?>' F@ J ' EAG?%
A?' F@' =I @%' I ' E E' ?A ' C@ A @ ' GF@ F@C' F@' AA<' D' F@' _'
D=D@C%' GF F' G= ' > B@?' A' F J ' DA?' I@ ?>' = AG@E' A' F=B@' GA?'
F ' G=>@C ' A?@ ' F@?' G A@ 1A C' @ @C ' G F' F= <' A?' F@'
=I @;' =1 @C' GF F' F@' G@? ' A' F@' @?E' A1' F@' CAAJ%' C?@E' F '
F= <%'=?E' = E' F= 'F@' GA E' I@ ' F@ J ' =' > ?@=' @= F' F= ' F@' GA E'
?=J@' =?A F@C' @ @C' GF F' FA E' I@' J=E@%' =?E' =' I= ?' D ' AB@C'
' ?A F@C' @ @C' G= %' = ACE ?> %' J=E@%' =?E' AB@C@E' G F' ='
I= ?' A?@ '?=J @E' =' @ @C%' I ' ?A ' F@' C >F ' A?@';' I 'GF F' F@'
A F@C ' GA?' =' > C Z=' @= F' " FA A?' =?E' I=DD@ ' F@?' = E%
7 @' ' C@' A' A @';' G!@ J = ' = ' G@ ' J =<@' ' J A @%' = ' G@' =C@'
C@' A' G ?'$ G@' J = ' = ' G@ ' @= @' F J 'A1'F ' J A?@ ';' F@' F= ' J AC@'
F=?' F@' <?AG ' GF= ' A' EA' G F H F@' DCA @ AC' G= ' A' GAC<@E'
D' G F' F@' FAD@' A1' >= ?%' F= ' F@' = ' @?> F%'=1 @C' 3=C A ' J '
I@ ?>' DCADA @E%' =<@E' F ' GA' DA ' I ' =?E' F@' @B@?' > ?@= ';'
=1 @C' GF F' A?@ ' ?=J @E' =' @ @C%' =?E' > @ @E' C >F ';' b?E' F@?'
G@? ' A' F@' =I @%' G@D 'A11' F@' I ' =?E! JA?@ %' =?E' G@? ' A' F@'
EAAC' A1' F@' CAAJ';' F@' A F@C' DC A?@C ' ?>' %' =?E' F@' DCA @T
AC' J =< ?>' ?A' AIZ@ A?%' A? @ B ?>' F= ' F@' F=E' 1= C ' A ' F@'
JA?@ ' A' A?@ ' ' =' F ' J @' AJ@' DA @' A11 @C ' =J@' A'
F@' FA @%' GFA%' DA?' @@ ?>' A?@ %' C=?' F= ' AG=CE ' F@' EAAC%'
@ K@E' F J%' =?E' ICA >F ' F J' I= <' ? A' F@' CAAJ';' =?E%' DA?' D@CT
@ B ?>%' 1CAJ' F@' F= < ' DA?' F@' =I @%' GF= ' F=E' I@@?' >A ?>' A?%'
AA<' F@' GFA @' D=C ' ? A' AE ' DA?' @=C F ?>' F@' DC A?@C %'
=IA ' @ >F ' > ?@= ' ?' = F' G@C@' 1A ?E' DA?' F@ J%' =?E' =' >C@= '
? J I@C' A1' 1 = F' ?A @ %' I ' ?A' C@= ' A?@ '$ =?E' ' G= ' =1 @CG=CE '
1A ?E' F= ' =' J D' A1' D=D@C%' GF F' G= 'D ' ? ?' F@' DCA @ ACH'
F=?E ' I ' A?@ ' GF@?' F@' A11 @C ' =J@' ?%' A? = ?@E' F@' GA' DA '
I ' I@ A?> ?>' A' F@' DCA @ AC' F@' DCA @ AC' = E%' DA?' F '
CA @]=J ?= A?%' F= ' F@' E E' ?A ' <?AG' GF@ F@C' F@' D=D@C' GF F'
G= '> B@?' A'F J ' I ' A?@ %' A?' F ' FAG ?>' 1AC ' DA ?E %' G= ' ='C@= '
@?' DA ?E' ?A @' AC' ?A ';' F= ' F@' ? @?E@E' A' >= J I @;' F= %' F=B ?>'
GA?' F@' 1 C 'G=>@C%' F@' FA E%' 1' F@' C=? = A?' F=E' @?E@E' F@C@%'
F=B@' <@D ' F@' > ?@=;' F= ' F@' E E' ?A ' AIZ@ ' A' A?@ ' =< ?>' F '
1AC GA' DA ?E ' @B@?' F ?> ' GF@?' F@' A ;' =?E' F= %' 1' A?@ '
F=E' > @ @E' GCA?>' F@' @ A?E' J @%' F@' @]D@ @E' A' C@ @ B@' 11AJ'
F J' 1AC GA' DA ?E ' @B@?' F ?> %' F@' = J A ? ' A1' F@' =<@
DA?' F ' @B E@? @' ' G= ' A? @?E@E%' A?' I@F= 1' A1' F@' DC A?@C

F= ' F ' G= ' =' J @C@' >= J ?>' C=? = A?%' AC%' = ' J A %' A? ' =' F@= %'
=?E' ?A ' =' 1@ A? ' ;' =?E' F@' A C ' @1 ' ' A' F@' Z ' A' A? E@C%'
GF@ F@C' F ' G@C@' =' >= J ?>' C=? = A?%' AC' GF@ F@C' ' G@C@' ='
DC@ A? @C @E' F@ J @' I ' F@' DC A?@C %' AC' =? ' A1' F@ J %' A' >@ ' 1CA J'
F@' DCA @ AC' F@' DA ' I ' =?E' = F ' F@' Z C ' G@C@' A1' AD ? A?%'
F= ' ' G= ' =' DC@ A? @C @E' F@ J @' ?' = ' F@' DC A?@C ' A' >@ ' 1CA J'
F@' DCA @ AC' F ' DA ' F ' =?E' = F' ;' =?E' F@ ' 1A ?E' F@ J ' >
%' DA?' =' @= @' C@ @CB@E%' F@' Z E>@ ' F@ E' F@' A?B A?' GCA?>' ;'
A?' F@' >CA ?E' F= ' < ' E4(4E " '' ?' F@' DA ' I ' =?E' = F' G= '
D=C @E' G F' I ' F@' DCA @ AC%' ?E@C' F@' E@=' F= ' ' F=E' I@@?'
1= C ' GA?' 1E3'

9f' =+ ; f' (<*f' 7 *#' "(/J+ *' 492<)9' 49/' '+ ; f' 2& +' 249/(' "/ -2 '' 9f' <=/ :' 42' "(21</(f' +' : /P * J/(# 3# 49/' 27 ' /(

' =DD@=C ' 1CA J' =?A F@C' = @' ?A ' A' J =<@' =? ' E 11@C@? @%' GF@C@' C@E ' J = ' F=B@' I @@?' A I = ?@E' I ' 1C= E @? ' ?>' F@' ?= J @' A1' =?A F@C' D@C A?%' A' GFA J' ?' 1= ' F@' C@E ' G=' ' ? @?E@E' A' I@' > B@?%' 1' F@' E@ B@C ' A1' F@' >AAE ' G@C@' J =E@' I ' F@' AG?@C' AC' =? ' A F@C' F=B ?>' F@' E DA ?>' DAG@C' 1AC' F= ' D CDA @ ' F %' GF@C@' F@' DC A?@C' G@? ' A' =' C=E@ J =?! ' FA @%' =?E' = E' F@' = J @' 1CA J' =' * C ' AA<%' =' ?@ >F I A C%' GFA' GA E' I @' J F' A I >@E' 1' F@' GA E' @ ' F@C' F=B@' F= 1' =' > ?@=H' GAC F' A1' B@C%' =?E' F= ' F@' GA E' @?E' Fp' F= 1' > ?@=' DC@ @? %' =?E' F@C@ I ' A I = ?@E' F@' B@C%' ' G= ' FA E@?' ?A ' A' I@' =' 1@ A? %' 1 3' ?E' ' F= ' I @@?' A I @CB@E' G F' C@ D@ ' A' F ' = @%' F= ' ?' C F' ' G= ' =' 46 ' A1' F@' B@C' DA?' F@' 1= F' F= ' F@' = J A ?' GA E' I @' C@D= E' '= ' =?A F@C' J @' ;' F= ' ' G= ' J A?@ ' A I = ?@E' A?' =' 1= @' D1@ @? @' ;' =?E' F= ' F@' = J @' E@ @C J ?= A?' F=E' I @@?' J =E@' ?' J =C' = @ ' = ' F@' E' = @ %' NCd

9/(f' +' 9+4' 7+=' 234+ ' / :' <' : /(' &+*=^' "(/4/ ' 1/=' 3# 79 19' 49/' 27 ' /(' 7+=' ' :<1/ :' 42' "+(4 7 49' 49/' "(2"/(4#

F@' DC A?@C' G= ' ?E @E' 1AC' @= ?>' =' F= %' GF F' G= ' = @E' ?' A?@' A ? ' A' I @' F@' DCAD@C ' A1' (' @uC%' =?E' ?' =?A F@C' A1' ' 5= ' F@' I =? @' A1' F@' @B E@? @' G= %' F= ' F@' DC A?@C' IA >F ' =' F= ' A1' @@C%' =' F= ' J =<@C%' = ' J ? @C' ;Y F= ' AA?' =1 @CT G=CE ' F@' = @E' 1AC' %' GF@?' F@' G= ' A E' ' GA E' I @' >A ' C@=E ' 1AC' F J ' ?' F= 1' =?' FA C%' I ' F= ' F@' A E' ?A ' F=B@' ' G FA ' D= ?>' 1AC' ' & F @' F@' G= ' ?' F@' FAD' @@C' FAG@E' F J ' =' F= ' GF F' F@' F=E' J =E@' 1AC' A?@' 5= %' DA?' GF F' F@' DC A?@C' = E%' F= ' F@' B@E' ?@] ' EAAC' A' F J ' ;' =?E' F@' F@?' = <@E' GF@?' 5= ' G= ' A' A J @' 1AC' F ' F= %' =?E' G= ' A E' F@' G= ' A' A J @' F= ' =1 @C?AA?' ?' F= 1' =?' FA C' AC' =?' FA C ' F@' DC A?@C' F@?' G@? ' =G= %' = ?>%' F@' GA E' @?E' F ' I CA F@CH ' G 1@' 1AC' F ' AG?' F= ' AA?' =1 @C' F@' G@? ' =G= %' F@' J @ ' =' I A %' GFA J' F@' = <@E' 1' F@' G= ' >A ?>' A' J ? @C' ;' =?E%' DA?' F@' I A ' = ?>' F= ' F@' G!= ' >A ?>' F F@C%' F@' = <@E' F J ' 1' F@' <?@G' @@C%' =?E' = E' F= ' 5= ' F=E' @? ' F J ' A' @@CH ' 1AC' F ' F= %' I ' F= ' = ' F@' AG@E' @@C 1AC' =' F= ' F J @ 1%' GF F' F@' F=E' ?A ' J A?@ ' A' D= ' 1AK%' F@' E E' ?A ' <@' A' >A ' ?E' F@' F@?' = <@E' F@' I A ' N A' GFA J' F@' F=E' DCA J @E' A J @ F ?>' 1AC' F ' CA I @d' A' =<@' F@' J @ =>@' 1CA J' = %' =?E' I C ?>' 5= H ' F= ' A' F J ' N F@' DC A?@Cd ' @' 1 C F@C' A E' F@' I A ' ?A ' A' >A' ? A

" B' /V' b' 192*=2 ' ' G' /+19' Y.M G' +=4' ' ' 1' .Y' =' .ME' " ' YYN' //' /) ' ' */#' .' 2V' ' ' NE' 79/(/' 49/' "(2=/1<42(' 7+=' ' :<1/ : ' 9# +' "(/12 '1/(4/ :' ' &(+<: <*/ '4 =19/ ; / ' 42' */ ' :' ; 2 ' /# 42' 3/' <=/ :' '' ' 0#' 2 '' +' "(2 ; =/' 49+4' 4' 72<*:' 3/' (/4< ; /+' +' :' 4' 7+=' 9/*:' ' 24' 42' 3/' *+(1/ '#' ' 9/' (/=<*4' 72<*:' 9+J/' 3// '' : &&/(/ '4 &' 49/' "2==/= = 2 '' 2 '*# 9+:' 3// '

"+(4/ :' 7 49' /V' &' 23=2 ' ' :' " ' .DY "OB' /V' ' 2*/ ; +' ' G' +=4' ' 1' .Y' =' .MI ' " ' YDG' .' /+19' HMH ' 24/' " B' 9 =' /+=/' +=' 7 /*#' +=' :+ ; =S' 1+=/' .' +' :' /) ' &' 40 '=2 ' ' .' " ' .AY' 7/(/' 12 ; ; / '4/ :' 2 '' '' /) ' &' : :*/42 ' ' .' " ' .A. W(D' G' +=4' ' ' 1' .Y' =' .MI ' " ' YDH

@@CH FAD ?= @5= NGFAJF@E@ C I@E I F D@C A?=?E=D@ =C A1 EC@ d FA E F=DD@?A IA F@C@ F@ DC A?@C F@?= AJD=?@E F@ IA D=C A1 F@G= =1 @C GF F F@ IA DCA @@E@E= A?@ A @@CH E@ B@C@E F J@ =>@=?E C@ @ B@E F@ F= ; GF F=1 @C =CC ?> D=C A1 F@G= 1AC F@ DC A?@C I F E@ C@ F@DC A?@C C@ @ B@E 1CAJF J=?E = E F@GA E =<@ F J @ 1 A 5= DA?F@ 1C= E I@ ?> E AB@C@E FAC =1 @CG=CE F@D 1 A?@C G= =DDC@F@?E@E G F F@F= ?F DA T @ A? G= AFZ@ @@1 A? F@ D=C A1 F@ DC A?@C F= F@ @ 1= E E ?A @ =I F= = @A1 =C @? ; =?E F= F@ ?E J@?A E F=B@gI@@1 DA?F@ = @1AC AI = ? ?> >AAE I 1= @ DC@ @? @ ?E DA?= = @C@ @CB@E G= I@ E F= F@A11@? @ E E ?A =JA ? A = 1@A? ; F@ AG?@C F=B ?> D=C @E G F F DCAD@C ? F@F=

9 12((/14 : =4(+14 2 =49+4 &49 27 '/("+(4 7 49 49 "2=P =/== 2 2 *#(/4+ ') 94 2& (2 "/(4# 49 2&& '1 = *+(1/'# ? 9<4 &49 27 '/(K"+(4 '24 2 '*# 7 49 49 "2=P =/== 2 ' 3<4 49 ( )94 2& "(2"/(4# 4 ? '24 *+(1/'#

@ A? F@ F=E 1AC J@C I@@? @CB=? A = >@? @J =? GFA E@= G F F@ DCA @ AC =?E =1 @C F@ @1 F @CB @ F@ = @E = F@ DCAT @ ACH FAD =?E = E F J = @C NJ @=? ?> F@ >@? @J =?GFA @ @CB @F@F=E @1 G=? @E = B@C C@=J @G@C E@ C@E F@ DCAT @ AC A > B@ A F J =?E A D EAG?A F J = @CH = A ? $ F@ DCA @ AC >=B@F J GA @G@C ? ?ACE@C F = F J = @CJ >F @ @ F= GF F F@ <@E I @ ; F@ AA<IA F=?E A E F@J $ F@DCA @ AC = @E F= F@E E ?A F=C>@F A J @C B F F@ @G@C ?AC E E F@ ? @?E A F=C>@F J G F @ F@C ? F@F=E= @C = ?@E GF F F@GA E F=B@ FA @?; G= F@ E F= = F@ DCA @ AC F=E D=C @E G F F@DA @ A? A ? =?E ?A F@ C >F A1 DCAD@C F@A11@? @G= =C @? ; I 1 F@ F=E @? I A?@ @G@C =?E F=C>@E F@ AJ @C G F BA E F=B@I@@?A F@CG @ N d A GF@C@ =DC A?@C B@? A = FAD =?E = E F= * C #AG? ?> G=?@E AJ @ F=G A AA< = =?E F@ DCA @ AC >=B@F@C 1 B@ F= B =?E F@ D= B?@E BA A1 F@J F@ =J @ @B@? ?> =?E F@ A F@C G@C@ 1A ?E ?F@C E@BA @E A F= IZ@ 1 3

F@C@ =C@ @B@C= =@GF F F=B@I@@?E@ E@E DA?F@ =J@ >CA ?E A I@A? AI=?>DCAD@C I 1= @DC@ @? @ =?E GF F G I@1A ?E ?F@ F=D @C E@BA @E A F= IZ@ 1 3

"B :+;=1+=/ 9+;3(/ +<'42' "( ) ==.E.G '' :4 =// ;= 49+4 49 6<:)= 492<)94 49 =/12 :12<'4 2<4 2& 49 T</=4 2 ' +=+<' /J/(9+: "2=/=2 '' 2& 49 9+4

/V +J/ '"2(4 +@ 3 = @ "( ) ==.EGY +#*/# (193 //*S 14=' I // :"' .AH) /V +J+)/ A + ! +44/=2 ' (= 27 ') 3/ ') 422 ** 42 +44/ : 49 "(=2 '/(7+=1T< 44/ : 3/1+<= 4 7+= +==< ; /: 49+4 (= 27 ') : :=/ ' :9 /(+' :49+4 =9 (/1) J/ :49 =9+7*= "(2"/(*# +' :49+4 4 +&4/(7+(:= / '4/(/ : '42 9/(; ' :42 12 'J/(4 49) ;' 42 9/(27 '' <=/ +' :+4 49+4 4 ; =9 9+:49 "2==/== 2 ''2& 49/ ; 9/(49 "(=2 '/(+=0/ :42 =// =2 ;) <'=' +' :=/*/14/ :47 2<4 2& 492=/ 49+4 7/(/ =927 '' 42 9 ; +' :' 3/ ') 'P &2(; /:' 2& 49 "(1/ =+ :' 9/ 7+'4/ :42 =927 49/ ; '42 9 = ; +=4/(+12<'4(#) 'P 4*/ ; +' ' +' :' 72<*:'4+0 49/ ; ' 42 9 ; ' +4 +'' 924/*' +' :' & 49/# 7/(=+"" (2J/ :' 2& 9 72<*:' (/4<('' +' :' "+# &2(49/ ; ' 2(& '24 3( ) 49/ ; 36 20 ? 9+7 /12(:/(2& <3* ' ' = (/"2(4/ :' 42 9+J 9/*:'49+4 4 B=' '24 *+(1/'# '' 49 "(=2 '/(42)2 +7+# 7 49 49)<' = +' :' '/J/((/4<('' += 49 "(2=/1<42(9+:' 4(<=4/ :' 49 "(=2 '/(7 49 49)<' = 2 ' 49 1(/ : 4 2& 9 = =42(#) ' 2"/*+' :' A 2V ' ' GNN' <4 49 = (<* ') =// ; = 2"/ # 42 12 ' = :/(+3* :2<34 ' ' ! "&B /) ' :+;=' :' / ' ^F' HH' /) ' +(' /=' G / ' ' ' AN' /) ' ==/V ' ' ' M ' HD.

(2"/(4# 234+ '/:' 3# &2(4<'/ 4/** ')' K749 +' "(2 ; =/' 42' (/4<('' 4

?' =?' ?E J @? ' 1AC' @= ?>' i ' ': E%' ' =DD@=C@E' F= ' F@' DC A?@C' G= ' =' > D %' =?E' F=E' A E' * C ' 5C AC' F= ' F@C@' G= ' AJ@' DCAD@C ' @1 ' 1AC' F@C' F= ' F@' F=E' I@@?' F@= @E' A1%' =?E' F= ' F@' DC A?@C' A E' >@ ' ' 1AC' F@C;' F= ' F@' A E' C= @' D C ' =?E' = ' F@ J %' 1' * C ' 5C AC' GA E' D ' F= 1' =' CAG?' A?' =' @C = ?' DA ' ?' =' IAAF%' GF F' F@' DA ? @E' A ' * C ' 5C AC' = E' F@' F=E' F@=CE' A1' F' F ?> %' =?E' F@' FA >F ' F= ' D C ' A E' F@' C= @E%' =?E' F@' G= ' ?E @E' A' D ' AJ@' JA?@ ' ?' F@' IAF<' F@' DC A?@C' @ C?@E' F@' ?@] ' E= %' =?E' = E' F@' F=E' I@@?' GAC< ?>' = ' ? >F %' =?E' F= ' F@C' F I=?EH' JA?@ ' GA E' ?A ' EA%' AE' F@' J ' F=B@' AB@C@ >? ;' =?E' F@' F@?' C@b C@E' * C ' 5C A1' A' > B@' F@C' = ' F@' JA?@ ' F@' F=E' >A %' =?E' DCAJ @E' F@' GA E' IC ?>' ' I= <' F@' ?@] ' * A?E= %' =?E' = A' F@' J' A1' i . %' GF F' F@' = E' I@ A?>@E' A' F@C ' ?' F@ @' C@DC@ @? = A? ' F@' G 1@' >Q%B@' F@C' = ' F@' JA?@ ' F@' A E' >@ %' = J A ? ?>' A' i ' ': _' & F@?' * C ' 5C AC' >=B@' F@' DC A?@C' F@' JA?@ %' F@' C@b C@E' =' F 1' A' GC=D' F@' JA?@ ' ?%' =?E' = A' =' F=G ' F@ @' G@C@' > B@?' A?' F@C' DCAJ @' A' C@ C?' F@ J ' A?' F@' * A?E= ' F@C' =C @ ' G@C@' = A' > B@?' A' F@' DC T A?@C' A?' F@C' DCAJ @' A' IC ?>' F@ J ' = ' I= <' A?' F@' * A?E= ' F@' DC A?@C' G= ' A' F=B@' i8' 1AC' F@C' CA I @ ' F@' ?@B@C' C@ C?@E' ' &=' F@ E' F= %' 1' F@' AC > ?=' ? @? A?' G= ' A? ' G F' =' B @G' A' DC= @' F@' =C ' A1' =' G F%' ?' GF F' F@' DC A?@C' J >F ' I@ @B@%' = FA >F' ' G= ' =1 @CG=CE ' = @C@E%' F@C@' GA E' I@' ?A' =C @? ' %' 1' ' G= ' =' J@C @' C <' A' >@ ' F@' DCAD@C %' G F' ?A' ? @? A?' A' C@ C?' %' ' G= ' =C @? %' NGd

&' +" "+7 'P 3(20/(S' =/(P J+'4' 9+J ')' +')'/'/(+# +<492P (4#' :/* J/(<'" +' "*/:)/' 2'' (/1/ J ')' +' "+(1/* 9/' 3/P * /J/=' 42' 12 'P 4+ '' J+*<+3*/=' 49 =' =' '24 *+(1/'#

1' =' D=G?ICA<@CH' @CB=? %' GFA' F= ' =' >@?@C= ' = FAC ' 1CAJ' F ' J= @C' A' = ' ?' F ' I ?@ %' E@ B@C ' D' =' D @E>@' A' F@' D=G?@C%' A?' C@ @ B ?>' =' D=C @ ' 1CAJ' F@' D=G?@C%' GF F' F@' DDA @ ' A? = ? ' B= =I @ %' GF F' F@' F= ' Z ' @@?' ?' F@' D=G?@CH' DA @ T A?%' F@' AI = ? ?>' A1' F@' D @E>@' I ' F@' D=G?@C' ' ?A ' =C @? ' DA?' =?' ?E J @? ' 1AC' @= ?>' =' E = JA?E' ICAA F' =?E' B=C A ' A F@C' =C @ %' A?@' C>@ %' GFA' G= ' ?' F@' @JD A ' A1' F@' DCA @T AC%' =' D=G?ICA<@C%' =?E' GFA' F=E' =' >@?@C= ' = FAC ' A' J=?=>@' F ' I ?@ %' = @E' F= ' F@' DC A?@C' =J @' A' F ' J= @CH' FAD%' =?E' DCAE @E' E D = @ ' A1' DCAD@C ' DC@B A ' D @E>@E%' A' F@' =JA ?' A1' i :%' GF F' G= ' F@' DCAD@C ' = E' ?' F@' ?E J@? %' =?E' E@ C@E' ' A' I@' ICA >F ' D' =?E' =' >F %' = ' F@' F=E' AJ@' E = JA?E ' A' @= ;' F@' F@?' DCAE @E' =' J= ' D= <@ ' A1' E = JA?E %' GF F' F@' E@ C@E' C>@ ' A' AA<' = %' =?E' A' =EB=? @' F@' JA ' F@' A E' DA?' F@ J ' C>@ ' AA<@E' = ' F@ J %' =?E' =>C@@E' A' =EB=? @' i ' A?' F@ J %' =?E' = ' F@' C@b @ ' A1' F@' DC A?@C' F=?E@E' F@ J ' AB@C' A' F J ' A' @= ' D%' GF F' F@' DC A?@C' E E' ?' F ' DC@ @? @%' =?E' F@?' C@ C?@E' =' D= <@ %' GF F' C>@ ' I@ @B@E' A' I@' F@' A?@' A? = ? ?>' F@' E = JA?E %' ' C@ @JF ?>' ' ?' @B@C ' C@ D@ ' C>@ ' D ' ' ?' F ' DA <@ %' =?E' F@?' F=?E@E' AB@C' A' F@' DC A?@C' F@' DCAD@C ' = E' ?' F@' ?E J@? %' =?E' i -:' ?' JA?@ ' 1AC' F@' E = JA?E %' GF F' F@' DDA @E' F@' F=E' >A ' F@' D= <@ ' A' E@DA @E' GF@?' =1 @CG=CE ' AD@?@E' G= ' 1A ?E' A' A? = ?' A A C@E' A?@ ' A1

W4 *' /) ' ' <'1/' .' [' ' L' AGH' 9+<' /**' ' +':' (2 ; "42' ' [' 9 +' :/1 = 2'' -) 94 ' 2''49/')(2<' :'49+4' (=' (2(' ; /(/*# "+(4/ :' 7 49' 49/' "2==/== 2'' 2& 49/' "(2"/(4#' +' :' /V"/14/ :' 4' 42' 3/' (/P 4<('/:' 4' 3# '2' ; /+'=' 7+((+'4='49/ "2= 4 2'' 49+4' '' /J/(#' 1+=/' 2& &2(4<'/P 4/** ')' 49/' 2&&/'1/' =' *+(1/'#? +' :' 79/(P /J/(' 49/' "(2=/1<42(' 6 +(4=' 7 49' 49/' "(2P "/(4#' 7 492<4' /V"/14 ')' 4' 42' 3/' (/4<('/:' 49/' ':' 14 ; /' 4' 2<)94' 42' 3/' &2(' &+*=/' "(/P 4/'1/=' ' !

>CA ' F= ' F@' AG?@C F D' A1' F@' >AAE ' G= ' ?A ' D=C @E' G F% F@' =CC @C % @CB=? ' F=B ?>' ?A' = FAC ' A' D=C ' G F' F@' AG?@C F D' A' F@' DC A?@C% =?E' F@' =< ?>' G= % F@C@1AC@% =C @? % 7'3

!22:-' :/[' * J/(/ :' 3# +' 1+((/(3# *+ =[' 4+0)' ; +# 3/' =42*2'

& F@C@' =' =CC @C' E@ B@C@E' >AAE ' A' =' GCA?>' D@C A?' I ' J =<@% ' G= ' F@ E' F= ' F@' E E' ?A ' D=C ' G F' F@' DCAD@C ' ?' F@' >AAE % =?E' F= ' =C @? ' J >F ' I@' AJ J @E' G F' C@ D@ ' A' F' >AAE ' I ' F@' D@C A?' C@ @ B ?>' F@ J ' 1CA J ' F@' =CC @C ' F@' (@ ACE@C' = E% F@' =CC @C' F=E' =' J @E' = FAC ' A' E@ B@C' A' 4-' @C = ?' D@ JA?% =?E' I ' @=B ?>' F@ J ' G F' =?A F@C' I ' J =<@' F@' DCAD@C ' G= ' ?A ' C@= ' D=C @E' GE F ' 783' 4 '

+=* /(' 2& 3+'Ø "+# ')' ; 2' /# 2'' &2()/ :' 2(:/(

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R5 8' /V' 2')=4(//49' ' .HD' //' '24/' W+b' Rf8 /) ' 44*/' 2' 2V' ' ' AAN' <==/** ' ! <(' /#' ' /12(:/(" 8 ' I' (' 1/' HE ' ' ' ' E' ' ' ' M' ' .AM' ' ' *+/0' 3<(' ' ' Z ' *+ ; /' 4' 49/' =4+4/' 2& 49/' *+ 7' 2'' 49 -' =<36/14' 9/' 1+=/-' : /1 :P ')' 49+4' 49/' "(2"/(4# ; <=4' 3/' 4+0/ '' +)+ ' =4' 49/' 12' =/' 4' 2& 49/' 27' /(' 7/(/' : /1 : /:' 79/'' *+(1/'# 7+-' +' 1+" 4+*' 2&&/' 1/ ? 3<4' 49 -' 7+-'+&4/(7+(:-' T<+* & /:' 79/(/' 49/' /(J+' 4' 2(+)/' 4' 9+:' "2==/=P = 2'' 2& 49/')22:=' +' :' 49/# 7/(/' 4+0/ '' +)+ ' =4' 49/' 12' =/' 4' 2& 49/' =/(J+' 4' ? 3<4' 49 -' +)+ '' 7+-' 12' & ' /:' 42' =<19' =/(J+' 4-' +-' 9+:' +')T66 / +' +<492(4# 42' "+(4' 7 49' 49/')22:=' 9/(/' -' +' : =4 ' 14 2 '' 3/P 47 / /'' 49 -' 1+=/' +' :' 2' /' 79/(/' 49/' +<492(4# -' * ; 4/ :' 42' "+(4 ')' 7 49' 49/' "2==/== 2 '' 2' *#' +-' : =4 ')< =9/ :' &(2 ; 49/' "(2"/(4#' 9/' : && 1<*4#' '' 49/=/' 1+=/-' -' 42' : /1 : /' 7 49 '' 79 19' 1*+-' 2& 1+=/-' +' #' "+(4 1<*+(' 1+=/' 12 ; /=' ' 49 ' O' 49+4' 49/' 1+((/(S' "2(4/(' '' 9/' ')' &' 2')=4(//49' .' 9+:' 'Z' +<492(4# 42' : /+* 7 49' 49/' "(2"/(4# +4 +** ' +' :' 4' -' 42' 3/' 23=/(J/ :' 49+4' 49/' =+ ; /' 6<:)/-' :/1 : /:' 49+4' 1+=/' +-' : /1 : /:' 9/' <// '' &' +10' =2' ' .' '' . IN' 42' 79 19' 1+=/' 4' 7+-'=+ :' 42' 3/' 2"" 2=/ : ' 9/(/' ' 49 ' O' 49/(/' 7+-' +')/' /(+* +<492(4# '' 49/' "+7 ' 3(20/(S' +== =4+ ' 4' 42' "+(4' 7 49' 49/' "* /:)/=' +' :' 49/' 249/(' 1+=/-' 1+ ; /' 7 49 '' 49/' =+ ; /' "(' 1 "*/' 9/' 1+=9 /(' 2& +' 3+' O' 9+-' +' : =1(/4 2 '' 42' =//' 79/49/(' +' 19/T</' -')/' < ' /' +' :' 9/' 9+=' ' 2' :2<34' +'' +<492(4# 42' "+# ; 2' /# '' (/="/14 2& +')/' < ' /' 19/T</' 3<4' 9/' 9+-' 7 49' 4' +')/' /(+* +<492(4# 42' "+(4 7 49' 49/' ; 2' /# +-' (/)+(:-' 49 (:' "/(=2' = q

A?@C' G= ' F=C>@E' G F' =C @? ' A1' F@' i9' ' E' F@' Z C ' 1A ?E' F@' DC A?@C' F=E' F@' 6 !& > ' *>"6 #!' = ' F@' J A J @? ' A1' =< ?>' D' F@' J A?@ ' 1CA J ' F@' A ? @C' =?E' F@' DC A?@C' G= ' A?B @E ' @ E' I ' =' J =ZAC ' A1' F@' Z E>@ ' F= ' F@' A?B A?' G= ' C >F ' F< ' I & !!' B ' N "! ' E ?> F@E' I ' F@' J =ZAC ' I ' F@ E' A' I@' ?E ?> F=I @' I ' * =C ?' ' C=J G@ ' C@ ' ' = <I ? ' ' * @ AC' ' 1@F' ' CAB@' ' # @? J =?' ' =?E' C F I= E' ' F= ' = J ?>' F@' @C<' A' F=B@' =?' = FAC ' @b = ' A' = E' A' C@DC@ @? ' F@' 5A J = @C @?@C= ' =?E' A' F=B@' J @=? ' F= ' F@' DC A?@C' FA E' =<@' D' F@' J A?@ ' FA >F' F@' A? ' A' J @=? ' I@ = @' A1' =' J =<@' GF F' F@' J =E@' = ' A' F@' E@? ' A1' F@' DC A?@C' G F' F@' D@C A?' C@= ' @? @E' A' F@' J A?@ ' F@' DC A?@C' I@ ?>' =G=C@' A1' F@' =<@' =?E' =< ?>' D' F@' J A?@ ' 6 !& > ' *>"6 #!' G= ' > ' A1' =< ?>' =?E' @= ?>!' F@' J A?@ ' ?E' = A' F= ' = FA >F' F@' @C<' =?E' F@C@1AC@' F@' 5A J = @C @?@C= ' ? @?E@E' F= ' F@' DCAD@C ' ?' F@' J A?@ ' FA E' I@ A?>' A' F@' DC A?@C' @ ' = ' F@' A' ? @?E@E' ?' A? @b @? @' A1' =' J =<@' = ' A' F ' E@? ' =?E' Fp' DC A?@C' <?@G' A1' F@' J =<@' =?E' F=E' F@' 6 !& > ' *>"6 #!' = ' F@' J @' F@' DC A?@C' G= ' > ' A1' =C @? ' @ E' I ' AB ' ' 6@ ' ' =?E' 6@= ?>' ' F= ' F@' @C<' F=E' ?A' DCAD@C ' ?' F@' J A?@ ' AC' DABB@C' A' D=C ' G F' ' A' F@' DC A?@C' I ' A? ' DA @ A?',' F= ' F@' = FAC ' A1' F@' @C<' G= ' =' D@ = ' = FAC ' ?A ' D C @E' =?E' F= ' A?' F= ' >CA ?E' A? ! F@' A?B A?' FA E' =?E ' ' 5 >A ' F= ' DA @ A?' A1' F@' J A?@ ' G= ' ?@B@C' > B@?' I ' F@' @C<' A' F@' DC A?@C' GFA' GF @' ' = ' A?' F@! A ? @C' =?E' I@1AC@' F@' >A ' J =? = ' DA @ A?' A1' ' A? @ B@E' F@' 6 !& > ' *>"6 #!' =?E' AA<' ' =?E' F@C@1AC@' ' G= ' =C @? ' * =C ?' ' C=J G@ ' ' C@ ' ' =?E' @= I ' ' E @? @? @ ' F@ E' F= ' F@' J A?@ ' G= ' ?A ' =<@?' ! ! 4' #4 &! 4 ' =?E' F= ' F@C@' G= ' ?A' C@ D= ' ?BA B@E' ?' F@' =< ?>' I ' F@' DC A?@C' =?E' F@C@T 1AC@' F@C@' G= ' ?A' =C @? ' @ E' I ' C=J G@ ' ' =?E' C@ ' ' F= ' F@' = FAC ' A1' F@' @C<' @] @?E@E' A' = FAC @' 6 J' A' D=C ' G F' F@' DA @ A?' =?E' DCAD@C ' A1' F@' =C>@C' J ' N d' F@' ' Z E> J @? ' A1' F@' ACE' F @1' @' A1' ?> =?E' =?E' = <I C?' ' * @ AC' ' F' ' CAB@' ' # @? J =?' ' =?E' C F I= E' ' ' = ' 1A AG ' $ ` Y

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)22 :=' 9/' 4+0/ '' ' ' ' 27/J/(' 4' ; <=4' 3/' 32(' /' '' ; ' :' 49+4' 49 =' =' 49/' : /1 = 2 '' 2& 49/' 2<(4' 2& "" /+* ' +' :' 49+4' +** '&/(2(' 2<(4=' 2<)9 4' 42' +1 4' <"2 '' 4' 9/' 1+=/ ' 927/J/(' 7 ** 1(/+4/' =2 ; /' : && P 1<*4# +' :' 12 ' &<= 2 '' ''49/'*+ 7' 2& *+(1/ ' # ' &2(4 = ; "2== 3*/42(/12 ' 1 */' 4' 7 49' =2 ; /' "(/J 2<=' 1+=/=' +' :' +<492(4 /= '+' :' 4' ; +# 3/' : 2<34&<* 7 9/49/(' 49/' 2*:' (<*/' 2& *+ 7 ' 49+4')22 :=' ; <=4' 3/' 4+0/ '' ' ' ' +' :' <' : /(' =<19' 1 (1< ; =4+' :&/=' +=' 49+4' 4(/="+== 72<*:' * /' =' +*4/(/ :' 2(' ; 2 : & / :' 3# 49 =' : /1 = 2 '

@ @? = ' A' F@' C J@ ' ?' F@' DC@ @? ' = @' F@' Z C 'F=B@' 1A ?E' F= ' F@' DC A?@C' F=E' F@' 6 !& > '*>"6 #!' = ' F@' JAJ@?' A1' =< ?>' F@' JA?@ '1CAJ' F@' A ? @C% =?E' F= 'F@'<?@G' F@' JA?@ ' A'I@' F@' JA?@ 'A1' F@' 5A J= @C @?@C= 'GF@?' F@' AA<' ' D' A'1=C% F@C@1AC@% = ' F@' > '<?AG @E>@' =?E'1@ A? A ' ? @? A?' =C@' ?>C@E @? ' ?' F@' C J@'A1' @= ?>% G@' J ' =<@' '= 'DCAB@E' F= ' F@'DC A?@C' G= '> ; I ' F@' = @' = @ '1= 'GF F'C= @' F@' EA I ' GF@ F@C' ?E@C' F@' C J =? @ ' = @E' F ' G= ' =' !' =< ?>%H =?E' = A'GF@ F@C' 'G= ' =' 7 @= ?>'H G F ?' F@' J@=? ?>' D ' I ' F@' =G' A?' F@ @' =B@CJ@? ' ?' =?' ?E @ J@?'1AC' =C @? % =?E' F@' C J =? @ 'GF F'C= @' F= 'EA I '=C@4= '1gd AG

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F@?' =' @ A?E' b @ A?' =CE @ % GF@ F@C' ' =?' I@' DCAD@C ' = E' F= 'F@' A @' F@' JA?@ % ?= J F' = ' F@' @C<% =?E' F@C@1AC@' A?' F 'F DA F@ ' F@'5A J= @C @?@C= % ? @?E@E' F= ' F@'DCAD@C ' ?' F@' JA?@ ' FA E' I@ A?>' A' F@' J=?' I@1AC@' F J% FA >F' F@' ? @?E@E' F= ' ?' A? @b @? @' A1' =' J =<@'= 'A'F ' E@? % =?E' F@'DC A?@C' 1CAJ' F@' I@> ?? ?>' <?@G' A1' F@' J =<@% =?E' F=E% = ' F@' J@' A1' =< ?>' F@' JA?@ % F@'> ' ? @? A?' A' @= '

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& @' ?AG'DCA @@E' A' = @' F@'C@= A? 'A?'GF F'G@' F ?<' F= ' ' A >F ' A'I@'F@ E' F= ' F@C@' G= % ?E@C' F@' C J =? @ ' = @E% =' 7 =< ?>'H G F ?' F@' J@=? ?>' A1' F@' =B@CJ@?' ?' F@' ?E J@? ' & @' =>C@@' F= ' = ACE ?>' A' F@' E@ E@E' = @ ' ' ?A' 1@ A? ' = ' AJ JA?' =G' A' @= ' >AAE ' 1' F@' >AAE ' G@C@' = C@=E ' =G1 ' ?' F@'DA @ A?' A1' F@' F @1% =?E' F= ' F@C@1AC@' = ' AJ JA?' =G' =' I= @@' A1'>AAE % AC' =' D@C=A?' GFA'1 ?E ' >AAE ' A % =?E' ?A '<?AG ?>' AC' F=B ?>' F@' J@=? 'A1'<?AG ?>' GFA @' F@ 'G@ !@% =<@ 'DA @ A?

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E C@ @E' A' CA=E%' GF F' F@' E@ B@C@E' A' #= @%' GFA' E@ B@C@E' '
A' F@' DC A?@C' = ' F@' G= ' 1 C ' ACE@C@E ' F@4' @ @C' @? ' I ' F@'
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AIZ@ @E' A?' I@F= 1' A1' F@' DC A?@C' = ' F@' C = ' F= ' F ' G= ' ?A'
1@ A? %' I@ = @' F@' =I A @' EA J ? A?' A1' F@' DCAD@C ' G= ' D=C @E'
G F' I ' F@' AG?@C%' FA >F' ?E @E' F@C@ E' I;'' J @=? ' A1' =' 1= @'
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' 1' F@' AG?@C' F=E' ?A ' D=C @E' G F' !< 'E"4E " '' ?' F@' >AAE %'
I ' A? ' G F' F@' E4 !4 ' A1' F@ J %' FR' b @ A?' A1' =C @? '
1AC J @C ' C@ J = ?@E' AD@?%' =?E' E@D@?E@E' DA?' F@' 1= %' GF@ F@C' = '
F@' J @' A1' F@' = @>@E' 1@ A? A ' =< ?>%' F@' AG?@C' F=E' D=C @E'
G F' F@' DA @ A?' A1' F@' >AAE ' ?' F' =' J =??@C%' =?E' A' F' =?'
@] @? %' = ' A' @] E@' F@' E@=' A1' C@ D= ' AC' 1AC J @C %' 1' F@'
AG?@C' A1' F@' >AAE ' D=C @E' G F' F@' DA @ A?' A1' F@ J ' G FA '
1 = E' DC= @E' I ' F@' =<@C%' =?E' 1%' =1 @C' F@' AG?@C' F=E' A' D=C @E'
G F' F@' DA @ A?' A1' F@ J %' ?A F ?>' G= ' EA?@' A' E@ @C J ?@' F@'
DC B ' A1' A? C= %' ?E@C' GF F' F@' =<@C' F=E' F@' DA @ A?' A1'
F@ J ' E@ B@C@E' A' F J %' ?A' C@ D= %' =?E' F@C@1AC@' ?A' =C @? %' A E' '
I@' A J J @E' I ' F@ C' A?B@C A? ' ' F@' =G' ?' F ' C@ D@ ' '
= @C@E' I ' F@' - :' ,' -8' 3 @ ' ' %' ' %' = ' ?A @E' 6 ' D' 8
F@' 1A AG ?>' = @ ' FAG' F= ' GF@C@' F@%'DA @ A?' A1' F@' >AAE '
' 1C= E @? ' A I = ?@E' 6 !&4' *>"6 #! ' =?E' F@' DCAD@C ' ' ?A '
D=C @E' G F%' F@' D@C A?' =< ?>' F@ J ' J = ' I@' > ' A1' =C @? ' ?'
A? E@C ?>' F@ @' = @ %' GF F' G@C@' E@ E@E' I@1AC@' F@' = IAB@' %'
' J ' I@' C@ J @ J I@C@E' F= ' ? @' F= ' ' =' I= @@' A1' >AAE %' , %'
J = ' I@' > ' A1' =C @?

' 92= /(' 3# 49/' : /= (/' 2& 49/' "(=2 ' /(4220' + J+( ) 4# 2& = *O' =4210 ') ' 42' 9 =' *2:) ') =' 79/(/' 49/' "(=2 ' /("(/P 4/ ' : /:' 42

C@= C] ' =?E' F=CD @ ' G@C@' ?E @E' 1AC' @= ?>'] ' D= C' A1'
<' A < ?> %' F@' DCAD@C ' A1' ' E A? ' C@= C] %' ?' F@' F=T
C= @C' A1' @CB=? ' A' F=CD @ %' @1 ' =' ?A @' = ' F@' FAD' A1' * C '
E A?%' GFA' G= ' =' FA @C' ?' C E>@ C@@ %' & @ J ? @C%' E@ C ?>'
F= ' F@' GA E' @?E' =?' = AC J @? ' A1' <' A < ?> ' A' F ' J = @CH'
AE> ?> ' = ' F@' (@E = J D%' ?' W @@? b =C@ ' * C ' E A?' ?' A?T
@b @? @' AA<' =' B=C @ ' A1' <' A < ?> ' = ACE ?>' A' F@' E C@ A? '
C@= C] ' AD@?@E' F@' EAAC' A' F J %' =?E' ? CAE @E' F J ' ? A' =

!C3' /V' 40 ' 2' ' G' +=4' ' ' 1' ; +(0=' 2 '' 49 =' 1+=/' '' ' &' : :*/42 ' '
.Y' =' .MI ' "' YDH' /' *+ '1' ' /I' (/P .' "' .AA

D=C A C GF@C@ F=CD @ G= ?> ?= EC@ ?> >AG? F F= C Z EC@ @E =?E =?= ? = b =? A1 DAGE@C = AB@C F 1= @ * C E A?= ?1A E@E F G=C@ =?E F=CD @ AA<@E A]D= C A1 < A < ?> F@ DC @ A1 GF F * C E A?= A E F J G= 1A @@?= F ?> = D= C ;=?E F@ F@?= E@ C@E * C E A?= A 1@ F AJ@ < D @ @ 1AC IC@@ F@ =?E= 4& I = < A < ?> G F C@? F A < * C E A?= F ?>= F@]D= C A1 A < ?> GF F F=CD @ F=E AA<@E A A?= F@ I= < A1 = F= C =?E G@? FAJ@ 1AC F@ A F@C >AAE ; I ?A DA B@ =>C@@ J@? F=E = <@?= D = @ C@ D@ ?>= F@ A < ?> # C ?>= * C E A?H = I @? @ F=CD @ =? C@= C]E@ = J D@E G F F@]D= C A1 A < ?> GF F G@C@ DCAB@E A F=B@ I@@?=1 @CG=CE D=G?@E I F=CD @ F@ Z C A?B @E F@ DC A?@C =?E DA?= = @ C@ @CB@E F@ Z E>@ G@C@ A1 AD ? A?= F= F@ A?B A?= G= C >F 1AC F@ GFA @ A1 F@ DC A?@C H A?E J =? 1@ @E =?= AC > ?= =?E DC@ A? @C @E E@ >?= A AI = ?= = AC A DA @ A?= A1 F@ DCAD@C ; =?E F@ B@CE A1 F@ Z C J DAC @E F= ?= F@ C I@ @1 F@ @B ? @? A?= DC@ @E@E F@ @=B ?>= A1 F@ >AAE F@ Z E>@ FA >F = A F= @B@?= ?E@D@?E@? A1 F@ DC@ A? @C @E E@ >?= =?E @B ? @? A? F@C@ E E ?A =DD@=C A I@ = 11 @? E@ B@C A F=?>@ F@ DA @ A?= A1 F@ DCAD@C 1D 3

5C@B= ?>= DA?= = C=E@ J =?= A =<@ >AAE DCADA @E A I@ IA >F A => B@?D = @ ?E@C DC@ @? @ F= F@ DC @ F= F@?= I@ D= E 1AC F@ J =?E 1 C F@C DC@B= ?>= DA?F J A @=B@ F@ J F@C@ ?= F@ =C@ A1 = F CE D@C A? =?E F@?= >@ ?>= F@ J 1CA J F= F CE D@C A?G d D= ?>= F@ DC @ =C @? 1 6<! ! !4 F@ ? @? A?= G= A >@ F@ >AAE 1CA J F@ C=E@ J =? =?E ?A A D= 1AC F@ J DA?= =?= ?E J @? 1AC @= ?>= C ?<@ =?E 1=? =C @ F@ DCAD@C A1 @C@? =DD@=C@E F= F@ DC A?@C = @E = F@ FAD A1 @C@? A GFA J F@ G= = D@C1@ C=?>@C =?E = E A F J 7 = J AJ@ A =<@ = FA @ A1 1=? =C @ ; = J >A ?>= ? A F@ A ? C ! GE D= A = F 1 A G E@ B@C F@ >AAE =?E A J @CB@ J @ = AG = A =? H @ F@?= GCA @ A?= CE F ?= J @ ;H =?E =?A F@C =CE 1= @ 7 A= F 11 @ G=?= ??= E = ? @ ;H =?E =?A F@C =EEC@ E@ C I ?>= GF@C@ F@ AE>@E @ F@?= @ @ @E F@ =C @ ? F@ ?E J @? =?E E@ C@E F= F@ FA E I@ =<@?= F@ ?@] E= = 1 B@ ?= F@ =1 @C?AA?= I F@ A= F A1 @ ?= ?BA @ A1 F@ >AAE G= J =E@ A I @C@? ?= F@ DC@ @? @ A1 F@ DC A?@C; =?E F@ ?@] E= = 1 B@ @C@? =CC @E F@ >AAE D= <@E ?= = @ A F@ G=? F@ DC A?@C J @ F J F@C@ =?E = E 7 = J CDC @E F= J 1C @?E GFA DCA J @E A I@ F@C@ ?A A J @ H ?= b =C @C A1 =?= FA C = @ @C G= I CA >F I F@ GAD@??

W4b /V 9+J"*/== /+19 NG G +=4 1 .Y = .MA "= YDA /9+4 2 / "*/S 1+= WG +=4 . Y = . .G "" YNG YNHb +1 +=7+ ; / 4 2 / : + 9+J) 3// : /4/(; / : J/(# (/1 4*# 3# 49 6<:) /= 79/(+ ; + 2(: /(/ : + "+ (2 1+ : */=4 10 &(2 + = *J/(= ; 49 42 3 =/ 4 42 9 *2 :))= 79 49/(49/# 7/(=/ 4 +112(:) *# 7 49 + 3 ** 2 "+(1/* 3# + =/(J+ 4? + : 49 "(=2 /(12 4(J) 42 =/ : 49 =/(J+ 4 3+10 < : /(=2 ; "(/4/ 1/ 0/" 4 49)22 : ? + : 4 7+ (<*/ : 42 3 &/*2 # +*492<) 9 49/# 7/(: /* J/(/ : 7 49 4* /

3 *# 2 "+(1/*= ? =<19 : /* J/(# 3/) ; + : < : /(+ " /V" /14+4 2 " 3# 49 27 /(2 3/) " + : 49/ ; 2 /# ? &2(49/ <(#&2< : 49+4 4 7+= + "(/4/ 1/ 42 "<(19+= 7 49 4/ 4 42 =4/+* (+=4 927 J/J/((/P ; +(0 <"2 " 49 = 1+=/ 49+4 4 ; <=4 3 < : /(=422 : 49+4 49/ "(=2 /((+ +7+# 7 49 49/)22 : = 2(: : =2 ; 249/(+14 42 : / 24/ + 4/ 4 2 " 2 7 49 : (+7) 9 ; P =/*& &(2 ; + # +112< 4 2 49/ ; ? + : 49+4 2 1(/ : 4 7+= 4/ : / : 42 3) [/ " 9 ; 3<4 49+4 4 7+= ; /+ 4 += + =+*/ &2((/+ :# ; 2 /# 2 *# G +=4 .S M 3 : 24/" B

(/J+ *) 2 +4(+ : /= ; + 42 4+0/)22 : = 42 + "*+1/ 2 " "(/P 4/ 1/ 49+4 9/ =9+** 49/ " 9/ "+ : &2(49/ ; + : <1) 9 : 42 */+J/ 49/ ; 49/(/ " 49/ 1+(/ 2 + 49 (: "/(=2 + : 49/ ") /4P 4) 49/ ; &(2 : 9 : 7 492<4 "+#) &2(49/ ; = *+(1/ # & 49p 4/ 4 ;]X7 += 42)/4 49/)22 : = 7 492<4 "+#) &2(49/ ;

DA ' A' F@' DC A?@C%' GFA%' =1 @C' =DD@=C ?>' A' C@=E' %' = E%' 7 F '
' J 'B@C '>AAE' 1C @?E%' GFA' G '> B@' J @' i - %' = ' AJH' A11@@T
FA @%' = 'F= 1 D= ' @B@? H @' E@ C@E' @C@? ' A' J @@ ' F J' F@C@'
= ' F= ' J @%' =?E' F@?' E@ C@E' F@' IAA< <@@D@C' A' C@ @CB@' =' D = @'
1AC' F J' I ' F@' * =? F@ @C' A= F' ?@] ' E= %' GF@?' F@' = E' F@'
&A E' =<@' F@' = @' G F' F J ' AJ@' EA I ' G= ' @]DC@ @E'
GF@ F@C' 'G= '?A ' AA' =C>@' 1AC' F@' A= F;' IA F' @C@? ' =?E' F@'Y
DC A?@C' E@ C@E' ' J >F ' I@' =<@?' =C@' A1;' =?E' @C@? ' GAC@'
A?' F ' CA @]=J ?= A?' F= 'F@' A? E@C@E' F@' >AAE ' A' I@' A E%'
1' F@' >A ' F ' = F%' I ' ?A ' I@1AC@' A F' 7A1 ' F@' A= F' A1 @'
@C@? 'G@? ' A' AJH%' = ' F@' J @' =DDA ? @E%' I ' = B' ?A' 1C @?E' A1'
F@' DC A?@CH%' ?AC' F@' DC A?@C ' = 1'=?' FA C' =1 @C' F@ 'F=E' @1 '
F@' A11 @%' F@' DC A?@C' C@ C?@E' A' %' @ ?>' F@' IAA< <@@D@C' F@'
F=E' = @C@E' F ' J ?E%' =?E' GA E' =<@' FRC' = @' =G= ' F@?' @'
A11@C@E' F J' =' AB@C@ >?' 1AC' F ' CA I @%' F C@E' =' DAC @C' A' =CC ' F@'
= @' ? A' F@' C@@ %' =?E' F@C@' F C@E' =' =C %' ?' GF F' F@' F=E' '
A?B@ @E' A' =' FA @' A?' F@' A F@C' E@' A1' F@' C B@C ' @' G= '1A ?E'
?' F= ' FA @' ?' GA' FA C %' G F' F@' = @' ?D= <@E%' =?E' F@'
>AAE ' = ' =IA ' F@' CAAJ ' F@' DC A?@CH' A ? @ ' A? @?E@E' F= '
F@' G= ' @? @E' A' =' B@CE ' A1' = b = %' = ' =' AJD @ @' = @' A1' F@'
'>AAE ' F=E' =<@?' D = @' ' F@' Z C ' G@C@' E C@ @E' A' A? E@C'
GF@ F@C' F@ ' G@C@' = 1 @E' I ' F@' @B E@? @' F= ' F@' DC A?@C%'
GF@?' F@' 1 C ' = @E' DA?' @C@? %' F=E' ?A' ? @? A?' A1' I ?>' =?E'
D= ?>' 1AC' F@' >AAE %' I ' >=B@' F@' ACE@C' 1AC' F@' D CDA @' A1' >@ ?>'
@J ' A ' A1' @C@? H DA @ A?%' =?E' =1 @CG=CE ' =?E@ ?@ ' C@T
JAB ?>' =?E' A?B@C ?>' F@J ' A' F ' AG?' N;' =?E%' 1' F@ ' G@C@' A'
= 1 @E%' A' 1 ?E' F@' DC A?@C' > %' GF F' F@ ' E E ' ?E%' DA?'
=' = @' C@ @CB@E%' F@' Z E>@ ' G@C@' @=C ' A1' AD ? A?' F= ' F@C@' G= '
='1@ A? A ' =< ?>%' F@' Z C ' F=B ?>' 1A ?E' F= ' F@' DC A?@CH' ? @?T
A?%' 6<' ! ! !4 ' G= ' A' >@ ' F@' >AAE ' A ' A1' @C@? H DA @ A?%' =?E'
F@?' =?E@ ?@ ' C@JAB@' =?E' A?B@C ' F@J ' A' F ' AG?' @%' =?E'
F= ' F@' A?B A?' G= ' C >F ' 73
F@' D = ? 11' E@= ' ?' DD@C ';' A?@' @C%' GFA' <@G @' E@= '
?' F@J%' =J@' A' F J' =?E' = <@E' 1AC' 1 1 @@?' EAK@?' A1' DD@C %'
= ?>' F@' F=E' =?' ACE@C' 1AC' F@J ;' F@' D = ? 11' C@1 @E' A' C '
F J' G F' F@' >AAE %' I ' G@?' G F' F J' A' F@' D = @' A1' = @%' GF F'
G= ' F@' G=C@FA @' A1' F@' E@1@?E=? %' GFA @ = @' FA@' J =? 1= T
C@C ;' A?' =CC B ?>' F@C@%' @C' = E' A' F@' D = ? 11%' 7) A ' J '
?A '>A' ?%' AC' A ' B ' DA ' J ' AJ';' H F@' D = ? 11' C@J = ?@E' A?'
F@' A E@' =' b =C @C' A1' =?' FA C%' GF@?' @C' = J @' A %' F=B ?>'
A E' =?E' E@ B@C@E' F@' DD@C ' A' F@' E@1@?E=? ' ?' F@' G=C@FA @%'
=?E%' I@ ?>' = <@E' I ' F@' D = ? 11' 1AC' F@' JA?@ %' J =E@' =?' @] @%'
=?E' AA?' =1 @CG=CE ' C=?' =G= ' F@' D = ? 11' ?E @E' @C' 1AC'
@= ?>' F@' DD@C %' =?E' F@' G= ' A?B @E%' NJ d
DA?' =?' ?E J @?' 1AC' @= ?>' 1A C' A]@?%' F@' DCAD@C ' A1' F@'
* =Cb ' A1' =B A <%' '=DD@=C@E' F= ' (' =<@C' G= ' @JD A @E' I '
F@' I= 11' A1' F@' * =Cb ' A' @ ' F@' A]@?' = ' JD F ' 1= C' 1AC'
C@=E ' JA?@ ' F@' DC A?@C' ?b C@E' F@' DC @%' =?E' =>C@@E' 1AC'
i : 9' ' =<@C' = <@E' F J' A' J =C<' F@J ' NGF F' ' EA?@' I '
DD ?>' A11' AJ@' F= Cd;' F@' = E%' 7 " A% H ' J =C<' F@J ' I =?E I %'
=?E' 1' A ' 2#' EAG?' A' F@' 6 ?>H ' J %' I ' E E' ?A ' 1 ?E' F@' DC

+0 ')')22:=
7 492<4 49/'
12''=/ '4 2& 49/'
27 ' /(' 3/&2(/'
"+# ')' 49/'
"(1/ ' 79/((/'
9# 49/' <=+) /'
49/' "(1/' 2<)9&
42' 3/ - (=4"+ : '
=' *+(1/ '#' &

"B' /V' ' + ; "3/**' ' ' ' ' ' ' 'IDY
.DN' 1 4/ :' '' 4/"9/ '=2''&' +(4')' ') " B' #2'=' &' /' +==' ..' ' ' 'HGY

A?@C ; F=B ?> E ?@E F@C@ =<@C C@ C?@E ? A F@ 1= C A F@ D = @ GF@C@ F@ F=E @1 F@ I@= I F@ XG@C@ >A?@ GA G ?@ @ @B@C= DCAB@E F= F@ D C F= @E GA A1 F@ A]@? ? F@ 1= C 1CA J F@ DC A?@C @=C F G= =1 @CG=CE J =E@ 1AC F J ? F@ 1= C =?E= F@ E 11@C@? ?? G FA @ =<@C = E F= F@ AJ G= A J =C< F@ I@= GF@? F@ G@C@ A E; F= F@ =C@ ?A E@ B@C@E ? F@Z =C@ D= E 1AC GF F >@?@C= =IA E ??@C J@ =?E ' F@ DC A?@C F=E =DD @E A F J 1AC @=B@ A EC B@ F@J =G= F@ GA E F=B@ C@1 @E F@ F=E C@ @ B@E F@ DC @ F@ DC A?@C A E F J F ?=J @ G= I I E E ?A J@? A?GF@ F@V B@E =CCAG @1 A F@ Z C A = GF@ F@C F@ DC A?@C = F@ J @F@ J =E@ F@ I=C>= ? ? @?E@E A D= 1AC F@ A]@? AC J@C@ A >@ F@J ? A F DA @ A? A @ F@J =?E A?B@C F@ J A?@ A F AG? @ F@Z C 1A ?E F@ DC A?@C > =?E = E F@ FA >F F@ ?@B@C = =? J @ ? @?E@E A D= 1AC F@ I@= ?E DA? = = @ C@ @CB@E F@ A?B A?G= =1 CJ@E F@Z C F=B ?> 1A ?E F= F@ DC A?@C ?@B@C J @=? A D= 1AC F@A]@? 7 3

A GF@C@ AF@? =?E A ? @= @E = F@ DCA @ ACH FAD =?E ' AF@? = <@E F@ DC @ A1 GA G= A= GF F G@C@ ? F@ FAD G ?EAG =?E F@ DCA @ AC C@D @E 71 1 @@? F ?> HH AF@? = E 7) A J >A A F@ AG@ DC @ = ! ' ! < *4 " " 6# ' &4 'G H F@ DCA @ AC = E 7 F@? A F= F=B@ F@ J 1AC G@ B@ F ?> HH GF F G =>C@@E A I AF@? GFA = E F@ GA E D F@ G= A= ? A = > > =?E ?> = F@ EAAC ? GF F A ? G= ; A GF F F@ D ' @ AC C@D @E 73 @C G@ AF@? F=E ?A JA?@ I A ? F=E =?E GF@? AF@? G@? A A F@ > > F@ DCA @ AC FA >F F@ G@? A A >@ F@ JA?@ 1CA J A ? J J @E = @ =1 @C F@ G= A= F=E I@@? D = @E ? F@ > > AF@? >A ?=?E F@ ECAB@ A11 1 >= AD =?E 1AC GA @=C F@ DCA @ AC F=E I@@? ?=I @ A =DDC@F@?E F@ J F@ Z C 1A ?E F= ? F@ C AD ? A? F@ G= A= G@C@ D=C @E G F A?E A?= F= F@ JA?@ G= A I@ D= E = F@ J @ =?E F= AF@? AA< F@ J G F = 1@ A? A ? @? ; =?E DA? = @= @ C@ @CB@E F@ E>@ G@C@ ?=? J A A1 AD ? A? F= DA? F F?E ?> AF@? G= > A1 =C @? ; 1AC G= =?@]DC@ 1 ?E ?> F= F@ DCA @ AC A? D=C @E G F < E4 !4 A1 F@ >AAE NAd F@ DC A?@C G= ?E @E 1AC @= ?> = >C@= J =? D= C A1 A < ?> F@ DCAD@C A1 & ' & = @ * C ! & = @ GFA G= = FA @C ?@=C F@ J =C<@ E@ B@C@E GA D=C @ A? = ? ?> F@ >AAE J @? A?@E ? F@ ?E J @? A F =DDC@? @ G F E C@ A? A =CC F@J A F@ FA @ A1 * C @= F = FA @C ? * < C@@ F@=D E@ F@ =DDC@? @ G= >A ?> D E >= @ F G F F@ D=C @ ?E@C F =CJ F@ G= J @ I F@ DC A?@C = F@ I=C GFA = <@E F J GF@C@ I@ G= >A ?> A GF F F@ =DDC@? @ =? G@C@E 7 A * C @= FH H F@ DC A?@C /* DCAE ?> = J = D=C @ C@D @E 7 <?AG A C J = @C =?E AG F J 1AC FA @ D=C @ ; G= >A ?> 1AC F@ J A A C FAD F@C@1AC@ EA A > B@ J@ A C D=C @ =?E =<@ F I = < A A C J = @C ; F@C@ = @ @C ? E@ =?E J I@ J J @E = @ 1ACT G=CE@E A * C CAG? H F@ =DDC@? @ = ACE ?> A? @? @E

W' /J ! *3/(4 /) 29/' G /' GIN .EA // *27*/# .G 2V' GYN?

49/ *+()+ 7+ ; +: / 49 '4/'4 42 23 4+ 49/ ; 7 492<4 "+# ') &2(49/ ;

9/(/ (/+:# ; 2' /# 42 3/ "+ : &2( )22:= "+(4) 7 49 h h 2 49/)22:= 2 49/ +' " "2 = 4 2 49+4 49/ ; 2' /# 7 3/ &2(497 49 "+ : :2/ 2 4 : J/=4 5 2<4 2 49/ "(2P =/1<42(' +' 49/)22:= +(/ 4+9/ , 49/ 2&&/ '1/ *+(1/ '#

9/(/ 49/ 27 '/(2)22:= =/ ' 4 49/ ; 3# 9 =/(J+' 4 42 3/ : /* J/(/ :' 42 ' +' :' 49/ "(=2' /(&4+44 :<*/ ' 4*J "(2P 1<(/ :' 49/ : /* J/(# 2 49/ ; 42 9 ; P =/*& 3# "(/P 4/ ' :) 42 3/ 4 7+ 92*: / '' 42 3/ *+(1/ '#

A % F@' DCADA @E' @] F=?>@% =?E' E@ B@C@E' F@' GA' D=C @ ' A' F@' DC A?@C % =?E' F@4'DC A?@C' E@ B@C@E' F ' D=C @ ' A' F@' =DDC@? @ ' F@' DC A?@C% F=B I>' @11@ @E' F ' @] F=?>@% @?E@=BA C@E' A' @D=T C= @' F J @ 1' 1CA J ' F@' =DDC@? @' ; I ' F ' J =??@C' C@= @E' =' >F ' E@>C@@' A1' D A?' ?' F@' =DDC@? @H ' J ?E% GFA% A' = 1 ' F ' EA I % C=?' =1 @C' F@!DC A?@C% =?E' = <@E' F J' 1' F@' G= ' F@' *C ' @= F' A' GFA @' FA @' F@' G= ' A 'B@ ?>' F@' D=C @ ' V F@' DC A?@C' C@D @E% F= ' F@' G= ' * C ' @= F% =?E'E@ C@E' F@' =DDC@?T @' A' J =<@' F= @' FA J @' G F' F@' A F@C' D=C @ ' F@' D=C @ ' GF F' G= ' E@ B@C@E' I ' F@' DC A?@C' A? = ?@E' =' N A @ A?' A1' A E' C=> ' A1' ?A' B= @% =?E' F@' G= ' ?A ' F@' * C ' @= F' F@ DC @?E@E' A' I@' F@ 'Z C ' G@C@' A1' AD ? A?' F= ' F@' DC A?@C% I ' 1= @ ' DC@ @?E ?>' F= ' F@' G= ' >A ?>' A' F@' FA @' A1' F@' DCA @ AC' 1AC' * C ' @= FH' D=C @ % F=E' A? C B@E' A' J =<@' F ' @] F1 ?> , ' A1' D=C @ ' G F' =?' ? @? ' GCA?>1 ' A' A I = ?' =?E' A?B@C ' A' F ' AG?' @' F@' >AAE ' J @? A?@E' ?' F@' ?E J @? % =?E' F@C@1AC@' F@ ' 1A ?E' F J ' > ' ?E' DA?' =' = @' C@ @CB@E% F@' Z E>@ ' G@C@' ?=? J A ' A1' AD ? A?' F= ' F@' A?B A?' G= ' C >F ' A E% % GFA' E@ B@C@E' F@ C' AD ? A?% = E% F= ' ' =DD@=C@E' A' F J ' F= ' F@' DC A?@CH ' F=B ?>' A I = ?@E' F@ @' >AAE ' 1C= E @? ' 1CA J ' F@' =DD @? @' G= ' Z ' F@' =J @' = ' 1' F@' F=E' A I = ?@E' F@ J ' 1CA J ' F@' = = ' DA @ A?' A1' F@' J = @C ' N' Dd

! /44 ')')22:=
: /* J/ (/ :' ' 42'
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12 ' : 4 2 '' *9+4'
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F@' DC A?@C' G= ' ?E @E' 1AC' @= ?>' IC @ % =?E' ' =DD@=C@E' F= ' F@' DC A?@C' G@? ' A' F@' A ? ?> FA @' A1H F@' DCA @ AC' =?E' C@DC@ @? @E' F= ' F@' B@E' = ' " A ' : % C D ? C@@ % D = 1 @ E % =?E' DCADD @E' A' I '1A C' = < ' A1' IC @ % =?E 'D= ' " 6#' ' & 4 ' ' 4 ' # ! " ' ' =?E' G= ' A E' I ' F@' DCA @ ACH ' @C<' F= ' = ' F@' G= ' =' C=?>@C' F@' A E' ?A 'F=B@' F@ J ' A?' =? ' A F@C' @C J ' F@' DC A?@C' = E% F@' G=? @E' A' @?E' GA' A1' F@' = < ' J J @E = @ ' A' C J ?>T F= J % F@' ?BA @' =?E' F@' G@ >F ?>' ACE@C' G@C@' > B@?' A' F@' DC A?@C% =?E' F@' E@ B@C ' ACE@C' G= ' @? ' I ' =' @C<' A1' F@' DCA @T ACH ' A' F@' GF=C1% GF@C@' F@' IC @ ' G@C@' F@?' ?>% GF F' F@' ICA >F ' I= <% F@' DC A?@C' ?A ' F=B ?>' D= E' F@' J A?@ ' ?' * A?E= ' 1A AG ?>' F@' DC A?@C' =J @' =>= ?' A' F@' A ? ?> FA @' I@ G@@?' G@ B@' =?E' A?@% =?E' F@' E@ B@C ' ACE@C' G= ' F@?' A?' F@% DCA @ ACH ' E@ <% =?E' = E' F@' GA E' D= ' F@' J A?@ % I ' F=E' ?A ' >A ' =' F@b @' ; F@' G= ' A E' I ' F@' @C<% F= ' 1' F@' G F@E' A' D= ' F@' J A?@ % F@' F=E' ?A' A I Z@ A?' A' > B@' F J ' F@' E@ B@C ' ACE@C' F@' DC A?@C' G@? ' =G= ' G F' F@' ACE@C% =?E' F@' @C<' 1A AG@E' F J ' = J A ' J J @E = @ ' A' F@' GF= 1% =?E' 1A ?E' F@' DC A?@C' I ' A=E ?>' F@' IC p ' ? A' =' =C ' F@' @C<' ADD@E' F@' E@ B@C ' = ' F@' GF=C1' =IA ' A?@' AH A <' ; I ' ?' A? @b @? @' A1' GF= ' G= ' = E' I ' F@' D]H A?@ % =?E' F@' GF=C1 @C<' F=B ?>' = E' F= ' F@' <?@G' F@' DC A?@C% =?E' F@' F=E' F=E' >AAE ' E@ B@C@E' A' F J ' ?' F@' C@> =C' G= ' I@1AC@% ?A' 1 C F@C' ADDA A?' G= ' J =E@ ' F@' @C<' A E' F@' DC A?@C' F= ' F@' C@= A?' GF ' F@' GA E' ?A ' 11@C' F J ' A' =<@' F@' >AAE ' 1CA J ' F@' GF=C1' G= % F= ' F@' C@1@C@? @' F@' DC A?@C' F=E' > B@?' G= ' A?@' F@' A E' ?A ' C ' ; =?E' F@' A? @? @E' A' F@' IC @ ' I@ ?>' =<@?' =G= !% DA?' F@' @] DC@ ' A?E A?% =?E' F@' @?>=>@ J @?' A1' F@' DC A?@C% F= ' F@ ' FA E' I@' D= E' 1AC' = ' F ' EAAC' ?' C D ?' @@ % I@1AC@' F@ ' G@C@' AE>@E' ?' F@' FA @' " AIAE ' G= ' @?

B' *O '=S' 1+=/' .' /+19' AGM' G' /V ' 2 ')=4(//49' ' ' ' ' ' '
+=4' ' ' 1' .Y' =' CE).' "' YDH']/ * D' .' "' .AM

A' = AJD=? ' F@' =C %' F ' =?A F@C! @C<HA1' F@' DCA @ ACH ' G= ' E C@ @E' A' I@' = ' F@' DC A?@CH ' EAAC' ,' @' I@1AC@' GA' AH A <% GF F!GA E' I@' F@' J@' F@' =C ' GA E' =CC B@%' 1AC' F@' D CDA @' A1' C@ @ B ?>' D= J@? ' I@1AC@' F@' >AAE ' G@C@' =<@?' 1CA J ' F@' =C ' F= ' @C<' G@? ' A' F@' DC A?@CH ' FA @ ' "A ' : % C D ? C@@ %' =?E' =1 @C' G= ?>' ' F= 1 D= ' H@@%' F@' = J@' I= <' G FA ' @@ ?>' F@' DC A?@C%' F@' =C %' AC' @' >AAE ' F@' =C J =?%' GFA' ECAB@' F@' >AAE ' 1CA J ' F@' GZ =C1%' G= 4' E C@ @E' I ' F@' DC A?@C' A' EC B@' A' D = 1 @ E %' =C E' GF@?' FA' F=E' >A ' D=C ' A1' F@' G= ' F@' G= ' E C@ @E' I ' F@' DC A?@C' A' F J ' EAG?' =?A F@C' C@@ %' =?E' G= ' = ' F@' AC?@C' A1' =' C@@ %' G ' @CA;' ?A G F =?E ?>' F@' C@ J A? C=? @ ' A1' F@' =CT J =?%' F@' I ! @ ' G@C@' D ' I ' F@' DC A?@CH ' E C@ A? ' ? A' =?A F@C' =C %' =?E' EC BE?' =G= ' ?' =' E C@ A?' A? C=C ' A' D = 1 @ E %' =?E' AE>@E' ?' =?' @ J D '' & !@FA @%' =?E' F@' ?@] ' J AC? ?>' F@' DC A?@C' A11@C@E' F@' IC @ ' 1AC' = @%' C@DC@ @? ?>' F= ' F@' F=E' =<@?' F@ J ' 1AC' =' I=E' E@I ' ' G= ' AIZ@ @E' F= ' F@' @C<' F=B ?>' D@C J @E' @' DC A?@C' A' =<@' DA @ A?' A1! F@' E@ B@C ' ACE@C%' F@C@' G= ' =' AJD @ @' C=? 1@C' A1' F@' DCAD@C %' =?E' F= ' F@' I @b @?' A?B@CT A?' G= ' =' J @C@' IC@= F' A1' A? C= $ I ' < ' A ACE@C' FA >F ' F= ' ' GH= ' =' J @C@' D@C J A?' A' @?=I @' F J' A' C@ J AB@' F@ J ' A' F ' EAAC' ?' D = 1 @ E %' G F' =' 1 ' @?>=>@ J @?' A?' F@' D=C ' A1' F@' DC A?@C' F= ' F@' ACE@C' G= ' ?A ' A' AD@C= @' A' @?=I @' F J ' A' D ' F@ J ' G F ?' F ' AG?' DC@ J @ ' F@' J A?@ ' G= ' D= E' G =?E' F@' A E' F@' Z C ' F= %' 1! F@ ' I@ @B@E' F@C@' ?@B@C' G= ' =? ' :4 #' *!# ' ? @? A?' A' I %' I ' =?' ? @? A?' A' >@ ' F@' >AAE ' I ' 1C= E' 1CA J ' F@' AG?@C%' F@ ' FA E' 1 ?E' F@' DC A?@C' > $ G!F F' F@ ' E E% =?E' = E' F= ' F@ ' FA >F ' F@' DC A?@C' F=E' ?A' ? @? A?' A' I % I ' A' >@ ' F@ J ' I ' 1C= E' 1CA J ' F@' AG?@C' ;' =?E% DA?' =' = @' C@ @CB@E% F@' Z E>@ ' F@ E' F= ' F@' A?B A?' G= ' C >F % F@' Z C ' F=B ?>' 1A ?E' F= ' F@' DC A?@C' ?@B@C' J @=? ' A' I % I ' A' E@1C= E' F@' AG?@C% N d

A' GF@C@%' DA?' =?' ?E J @? ' 1AC' @= ?>' FC@@' DA ?E ' G@ >F ' A1' F@@ @' =?E' - ' -# ' ' =DD@=C@E' F= ' F@' DC A?@C' G@? ' A' F@' FAD' A1' =' F@@ @ J A?>@C' =?E' ACE@C@E' = I A ' FC@@' DA ?E ' A1% F@@ @' " A' >A' A' " A ' : % @>@? b =C@%' A' A?@' E J A?E % =?E' F@' DCA @T ACH ' I A ' G= ' A' =<@' ' E C@ ' G F' F=?>@' 1AC' =' CAG?' D @ @' & F@?' F@' =E' >A ' ?@=C' (@>@? b =C@' G F' F@' F@@ @% F@' DC A?@C' J @ ' F J ' =?E' = E% 7 F% A ' F=B@' >A ' F@' F@@ @% ' 1AC>A ' A' ACE@C']D@? @GAC F' A1' @>> ;' 1' A ' G ' > B@' J @' F@' F=?>@' =?E' F@' F@@ @' ' G ' D= ' A H F@' =E' F@?' >=B@' F J ' F@' F@@ @' =?E' # ;' F@' F@?' >=B@' F@' =E' =' CAG?% GF F' C?@E' A ' A' I@' =' I=E' A?@% FA >F ' F@' =E' I@ @B@E' ' A' I@' =' >AAE' A?@' = ' F@' J @' F@' AA<' ;' F@' =E' G@? ' I= <' 1AC' F@' @>> ' ;' F@' =E' = E% F= ' 1' F@' F=E' >A?@' A' E J A?E H ' F@' FA E' F=B@' @1 ' F@' F ?> ' F@C@% ')' &2(' 49/ ; I ' ?A ' F@' F=?>@' G FA ' F@' J A?@ %' =?E' F= ' F@' F=E' ?A' = FAC ' Y A' D=C ' G F' F@ @' >AAE ' ? @ ' F@' C@ @ B@E' F@' CAG?' D @ @' F@' J = @C' = E% F= ' F ' ? @? A?' R!=' A' @ ' C@' >AAE % =?E' 1' F@' C@ @ B@E' F@' CAG?' F@' FA E' I@' A I >@E' A' 1 C? F' F@' E 11@C@? @;' F@' ?@B@C' @]D@ @E' F@' >AAE ' I= <' =>= ?%' =?E' F@' IA ' F=E' ?A' = FAC ' A' D=C ' G F' F@' F=?>@' AC' F@' >AAE ' G FA ' D= J @? ' * C' @ Z ' C=I ?' N=1 @C' A? ?>' 5=C<@%' % =?E' 5= @ A?%' d' A E' F@' Z C ' F= ' 1' F@ ' FA >F ' F= ' ' G= ' =' DC@ @C @E

3+ ' ')')22 :=' &(2 ;' +' =/(J+ '4' 3# "+# ; /'4' 2& +' 3+ :' 9+%' 1(27 ' ' 49/' =/(J+ '4' 9+J ')' '2' +<492(4# 4Z "+(4' 7 49' 49/')22 :=' ,7 492<4' "+#%' ;' /'4' =' *+(P 1/'#' &' 49/' 'P 4/'4' 7+=' 4Z' 23P 4+ '' 49/')22 :=' 7 492<4' +#' ')' &2(' 49/ ;

N d @]' C' 5C= % ' ,' * ' ' ' 5' -8

3 ' C%

F@J@' A'>@'DA @ A?'A1' F@' DCAD@C 'G FA '>B ?>'=? F >' 1AC' %'=?E' F='F@'IA 'F=E' F@' J @E'= FAC 'A? %'F@'FA E' 1?E' F@'DC A?@C'> 'NVHd

34+ ' ')')22:=' &(2';'+' =/(J+'4 3# ;)+'=' 2& +' 72(49*/=' 19/T</'49/' =/(J+'4 9+J ')' '2'+<492(4# 42' "+(4 7 49' 49/')22:=' '/V1/"'4 &2(' 1+=9

F@'DC A?@C'G@C@' ?E @E'1AC' =C @? ' =B ?>' =<@?'='FA @' F@ 'G@?' A' F@'DCA @ ACH' FAD%' @ @ @E' F@'>AAE' ?'b @ A?% =?E' ACE@C@E' F@J' A'I@' @?'FAJ@' F@'DCA @ AC' @?' F@J'I' A?@' # %'=?E' >=B@' F J' C ' ?Z ? A? %'?A' A' D=C'G F' F@J' G FA 'C@ @ B ?>' F@'DC @' # %'A?'=CC B ?>'=' 1@'FA @%' A E' F@' DC A?@C' F='F@'G=' ? C @E%'?A' A' @=B@' F@'>AAE'G FA ' F@' JA?@ 'AC'=?'@b B= @? ' 1@C'='B= ?'= @JD 4 A' ' @'#' A' @' F@J'F=B@' F@' >AAE' A?' F@'DCAJ @'A1' D= J@ 'A?' F@'JACCAG% A?@'A1' F@'DC A?@C'GCA @'=' F@b @'1AC' F@'=JA ?'A1' F@'I %'=?E' >=B@' ' A'#%'C@b @ ?>'F J'?A' A' DC@ @?' ' ' F@' ?@]'E= ' D '@1' F@' >AAE %'=?E' C@ C?@E' F@' F@b @' A' F ' @JD A @C ' F@' F@b @'G=' DC@ @? @E' F@'?@]'JAC? ?>'=?E'E FA?A C@E% F@' DC A?@CH' = A ?' F=B ?>' I@@?' AJ@' J @'I@1AC@'AB@CEC=G?' ' G=' A? @?E@E' F='#'F=E'D=C @E'?A' A? 'G F' F@'DA @ A?' A1' F@' >AAE % F ' = A' G F' F@' DCAD@C ' ?' F@J%'=?E' @ 'B' Z5=CW @C!N d' G=' @E' E@C A?%' '$ 7 ' '1AC' A' A' F@G' F='F@'DC A?@C' F=E'C@= A?=I @'>CA ?E'1AC' I@ @B ?>' F=' F@' F@b @' GA E'I@'D=E' F@' =@'=DD@=C' A' J@' A' =DDCA= F' JAC@'?@=C ' A' - ?' ' 0&6 '1 3' 1' F@' AG?@C' A1' >AAE' D=C'G F' F@' DA @ A?% J@=? ?>'= A' A' D=C'G F' F@'DCAD@C %' ?' A? @b @? @' A1'='1C= E @?'C@DC@ @?= A?' A1' F@' D=C 'AI=?>' F@J%' ' ?A' =C @? %'I '='J@C@' F@= ' '1' F@' AG?@C' EA@'?A' J@=?' A' D=C'@B@?' GE F' F@'DA @ A?%'@] @D' ?' 4' @C=?'@B@? %'GF F' EA@'?A'F=DD@?%'=?E' F@'DC A?@C' = @'F J' A' D=C'G F' F@J' I ' J@=?'A1'1C= E%' F@' AG?@C' ?A' J@=?>' A' D=C'G F' F@' DCAD@C %' F@?' F@' =@' A?@'A1'=C @? ' @C@%'1' F@' AG?@C' F=E' F]? @1' =CC @E' F@'>AAE'='?E' D=C @E'G F' F@J'=' F@' @CB=?'E E% ?A' EA I ' BA E' F=B@' I@@?'=' =@'A1'1= @'DC@ @? @';' AC' 1' F@' @CB=?'F=E' F=E'='>@?@C='=' FAC 'A'=%'GA E' F=B@'I@@?' F@' =J@'=' 1' F@' J= @C'= @E' ?' F ' ? =? @' F@' F=E'=' J @IE' = FAC %'GF F' F@' FA @' A' @] @@E' '=J'A1'AD ? A?%'='DC@ @?' =EB @E%' F=' 1' F@' DC A?@C' ? @?E@E' A'>@'DA @ A?' A1' F@ @' >AAE'I '>B ?>'=' D @ @' A1'G= @'D=D@C%'GF F' F@' F=E'?A'C@= A?T =I @'>CA ?E' A'I@ @B@' GA E' I@' A1' @' A' =? IAE %'=?E' F=!' F@' @CB=?'F=E' C@ @ B@E' DA B@' ? C A?'?A' A' @=B@' F@'>AAE' G FA ' =F'D= J@?%' F@' F=C>@'A1'=C @? ' 'J=E@'A H1>3

C= E @? ' AI=? ?>'=' J=C@'1CA J'=' @CB=?'GFA' F=E'?A'= FAT C 'A' @ %' ?' @] F=?>@'1AC'=' FAC @'A1' @

A'GF@C@%' DA?'=?' ?E J@?'1AC' @= ?>'=' J=C@%' '=DD@=C@E' F=' F@'DCA @ AC' ? @?E ?>' A' @ 'F ' J=C@'=' ='1= C%' @?' F@C' F F@C' I '=' @CB=? %'A'GFAJ' F@' >=B@' ?A'= FAC ' A' @ ' F@' J=C@%'AC' A' E@='G F' F@C' ?'=? 'G= ' 'F@'F=E'F J @1'=CC B@E' F@C@' ' F@'1= C' F@'DC A?@C'=<@E' F@' @CB=?' F@'DC @'A1' F@' J=C@%'=?E'F@' A E' F J'i-8';' F@'DC A?@C' F@?'E@ C@E'F J' A' CA

WbKd /V' b' ;+**'.' ' ' ' 6 3' /33' A' 2V' ' '.AI'79/(/'472' 12<'4/(&/ 4' 9+*& 1(27'=' 7/(/' "+ :'&2(' +' "+ (' 2& 3224=' 42' +'=/ 7+'4' 792' 7+=' : P (/14/:' '24' 42' "+(4' 7 49' 49/ ;' 7 492<4' "+# ;/'4'49/' /12(:/(' +14/:'2'' 49/' "(/P 1/: ')' 1-/' ' +(0/=$' 1+=/'4 ' "' .II' +'.:' /V ' +20=2'' c9 .'"' .IN' 'O .' 79/497(' 49/' "(2"/(4# 7+=' '24' "+(4/:'7 49' ' ' !

W=d' G' 22' ' 'Z9 .' 44' ^ ' ` R B' &. " B' /)' 4/7+(4' ' 2V' ' '.DI' =' 49/' "(2=/1<42(' (/1/ J/:' 49/' 19/T</' +':'"(/=/'4/:' 4' 4' ;)9# 9+J/' 7/**3//'' 12'4/'':/:'4* +4' 9/' (+4 & /:' 49/'=/(J+'4$=' +1#' '4+0 ')' 4.', +':' 12'=/T</'4*# 49+4' 49/' 1+=/' 7+=' '24' *+(1/'#' ' /' +(0/=$=' 1+=/'G' /+19'Y.I' .'"'.II' ' ' !

I@@?' DCAD@C ' E C@ @E%' =?E' F=' F@ '1A ?E F=' 'G=' D=C' A1'
F@' F@J@'A1' F@' DC A?@C !' F=' F@' DCAD@C 'G=' A' I@'AI = ?@E'
I '=' DC@ @?E@E' = @' ?' F=' = @' F@C@'G=' ?A' A? C= %' F 'A? '
=' 1C= E%' I ' J @=? 'A1'GF F' F@'1@ A? 'G=' AJ J @E %'NGd

2'/# 23P
4+ '/:' 3#
'4 ; :+4 2'

F@' DCA @ C]'@? @C@E' =' = @ CAAJ'GF@C@'=' JA <'= A?'G='
I@ ?>' F@ E' F@' DC A?@C' B=' = A?@@C' =?E' <?A <@E' EAG?' ='
D @ @'A1' A F' A' F@' DCA @ C]'1AC' G@?]' F ?> '1AC'GF F'
F@'F=E' ?A 'I E%'='F@'<?@G ' F@'DCA F C]'E@? @E' F=' F@'F=E'
I E';' F@'DC A?@C'= @C @E' F=' F@'F=E%'=?E' J '?= '1AC' 'I@1AC@'
F@' A E' @=B@' F@' DCA @ C]' C @E' A' >A' A 'A1' F@' CAAJ%'
GF@?'=' A?1@E@C= @%' =?E ?>'I@ G@@?'F@C' =?E' Fp' EAAC%'= A' = E'
F=' F@' F=E' I E%'=?E' DC@B@? @E' F@C' @=B ?>' F@' F@?' ?'1@=C'
D= E' F@' JA?@ %'=?E' AA<'=G=' F@' A F%'GF F'G=' > B@?' A'F@C'
'&!='F@ E' F=' F@ @'1= ' A? @E'=' = @? %'=' F@ ' 11 @? '
FAG@E' F=' F@' JA?@ 'G='AI = ?@E' 1CAJ' F@' DCA @ C]'=>= ? '
F@C'G %' 7?3' 9

F@' DCA @ AC' J @ '=' J =?' =?E' G= <@E' G F' F J ' # C ?>' F@'
G= <' F@' J =?' D <@E' D'=' D C @%'GF F' F@' = E' F@' F=E' 1A ?E%'=?E'
F=' ' G=' ECADD@E' I ' F@' DC A?@ ' @' F@?' >=B@' ' A!' F@'
DC A?@C%'GFA' AD@?@E' %'=?E' F@C@'=DD@=C@E' A' I@'=IA 'i: ' ?'
>A E' ?' ' F@' DC A?@C' =DD@=C@E' >C= @1 %'=?E' = E' F@' GA E'
C@G=CE' F@' J =?' =?E' F@' DCA @ AC' 1AC' C@ AC ?>' ' F@' FC@@'
F@?' G@?' A' ='D I FA @' =?E' F=E' AJ@'EC ?<' 5C A?@C' F@?'
FAG@E' AJ@' JA?@ ' =?E' = E% 17 F@' J =?' GA E' @' F J' F=B@%'
y ' =?E' @' F J' >A' A 'A1' F ' >F ' F@' GA E' ?A ' = 'GF=' F@'
BA E' > B@' F J ' F@' J =?' F=?E@E' <F=' '' @@J@E' A' I@' i ' ?'
JA?@ %' =?E' F@' DC A?@C' '?E' DCA @ AC' F@?' B@?' A ' AT
>@ F@C ' F@ 'C@ C?@E%' =?E' DC A?@C' =DD@=C@E' A' > B@' F@' i '
I= <' =?E' i8' JAC@' F@' DC A?@C' F@?' = E' F@' GA E' EA' F@' =J@'
1AC' F@' DCA @ AC%' =?E' I ' F= ' J @=? ' AI = ?@E' FC@@' DA ?E ' ?'
>A E' =?E' F@' DCA @ ACH 'G= F' =?E' F= ?' 1CAJ' F J ' F@' DC A?@C'
=?E' F@' J =?' F@?' @1 ' F@' D I FA @' =?E' J =E@' A11' B F' F@' i '
=?E' F@'G= F' =?E' F= ?4' ' F@' C = ' F@' DCA @ AC' = E' F= ' F@'
F=?E@E' F@' i '=?E' F@' B= F' =?E' F= ?' A' F@' J @?' ?' @CCAC%'
I@ ?>' =1C= E' F=' F@ 'GA E' EA' AJ@ F ?>' A' F J%' =?E' ?A ' @]T
D@ ?>' F=' F@ 'GA E' > B@' F J' i8' @ E%' F=' F@' DC A?@C' G= !'
DCAD@C ' A?B @E' A1' =C @? ' DA?' F ' @B E@? @%' 7'3

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F@' DC A?@C' B=' ?E @E' 1AC' @= ?>' =' F@ ' =?E' 1 1 ? ?@'
DA ?E 'G@ >F 'A1' @=%'GF F%' ?' A?@' A ?'A1' F@' ?E J@? ' B@C@'
= @E' = ' F@' DCAD@ ! ' A1' ' = A?' =?E' & ' ' FAJD A?';' =?E%'
?' =?A F@C' A ? %' = ' F@' DCAD@C ' A1' F@' = ' ?E =' AJD=? '
F@' 1= ' 3@C@%' F=' * @ C ' = A?',' A%' BFA' G@C@' @=' ICA<@C %'
F=E' D C F= @E' F@' F@ 'A1' @=' ?' b @ A?' "A' .% %'=' F@' = '
?E =' A @%' I ' F=E' ?A ' =<@?' ' =G= %'GF@?' F@' DC A?@C%' GFA'
G=' ?' ?A' G=' '@J D A @E' I ' F@J%' G@?' F F@C%'=?E%'>A ?>' D' A'
F@' D = @' GF@C@' F@' C@b @ ' D=D@C ' B@C@' <@D %' @ @ @E' A?@' A1'
F@J%' =?E' F@?' DCA @@E@E%' G F' F@' D=D@C' ?' F ' F=?E%'=' 1' A'
AA<' 1AC'=' F@ 'A1' @=' ACC@ DA?E ?>'G F' F@' ? J I@C' A?' C@' D=D@C'
F@' @CB=?' ?' F@' ?E =' A @' GFA' F=E'' F@' =C@' A1' F@' C@b @ '
D=D@C %' @@ ?>' F J' A' @?>=>@E%' G@?' D' A' F J%' AA<' F@' D=D@C'
GF F' G=' ?' F ' F=?E%' =?E%' @@ ?>' F@' ? J I@C' .% ' DA?'

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G= F@ F@ F@ G=? @E =?E F@?C@ C?@E F@D=D@C A F J ?
ACE@C F= F@J >F >A A F@D@CJ A11 @ =?E >@ D@CJ F@
DC A?@C F@?G@? A F@ D@CJ A11 @ =?E FAC =1 @CG=CE
C@ C?@E G F = D@CJ A F@ ?E = A @ GF@C@ F@ =J @ @CT
B=? GFA F=E F@ =C@ A1 F@ C@b @ D=D@C C@ @ B@E F@ D@CJ
1CAJ F J =?E = <@E F J GFA @ D=C ?@C F@ G= =?E DA?F
=? G@C ?> 7 " A FH HC@ C?@E F@ D@CJ A F J =>= ? =?E
@? @C@E F@ ?bZZ?@ A1 " A A? ? F@ IAA< F@ DC A?@C F@? AA<
=G= F@ F@ A1 4 @= DA? F @B E@? @ F@ Z C 1A ?E F@
DC A?@C > G @?=?A IZ@ A?G= =<@?I F A ? @ F= =
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E@J @=?A C ; I GDAC1 = = @C@ @CB@E F@ Z E>@ G@C@ @=C A1
AD ? A? F= F@A11@? @ =J A ? @E A 1@ A? 783

DA?=? ?E J @? 1AC @= ?> GF@= F@ DCAD@C A1 G= ?@
=?E A F@C =DD@=C@E F= F@ GF@= G= ?A F@ C DCAD@C I
G= E@DA @E ? A?@ A1 F@ C AC@FA @ GF F G= ? F@ = !@ A1
= G < A?@ A1 F@ C @CB=? GFA F=E = FAC A E@ B@C F@
GF@= A? A? F@ ACE@C A1 F@ DCA @ AC AC A1 = AG F@ C
J =?=> ?> @C< F@ DC A?@C = @CB=? = A A1 F@ DCA @ ACH
=J @ G F = J =?=?E =C =?E AI = ?@E F@ <@ A1 F@ AC@FA @
1CAJ = G < I C@DC@ @? ?> F= F@ F=E I@@? @? I = AG
1AC 1B@ b =C @C E1 GF@= GF F F@ G= A =<@ A F@ C >F A?
(= G= ; = G < I@ @B ?> F = @J @? = AG@E F@ GF@= A
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G F F@ GF@= G= E DA @E A1 I F@ DC A?@CH = A = @
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=J A ? @E A =C @? ; =?E DA?= = @ C@ @CB@E =1 @C = B@CE A1
> G= F@ E F= F@ A?B A?G= C >F ; 1AC F@ GF@=
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! =<@?A F@ C >F A?(= G= =?E F@ DCAD@C C@J = ?@E ? F@
DCA @ AC FCA >FA = I= @@ 163

DA?=? ?E J @? 1AC @= ?> = G= F Fu DCAD@C A1
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GF F C@b C ?> AJ @ C@> = ?> F@ F=E @? A F@ @ @C
@ @C G= GC @?I AJ @ A?@ ? F ?=J @ =?E G FA F
= FAC C@b @ ?> F@ @ @C A C@ C? F@ G= F A < A?@
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F G= = ACE ?> EA?@ I = @C< = F@ DA A11 @ A? F@
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F@' & = F' G= ' @? ' I ' F@' @ @C' ?' D C =? @' A1' F@' @ @C';' ' G= ' AIZ@ @E' F= ' F@' A11@? @' G= ' AI = ? ?>' F@' G= F' I ' 1= @' DC@ @? @ %' =?E' ?A ' =C ? ';' I ' 'G= ' F@ E%' A?' =' = @' C@ @CB@E%' F= ' F@' DC A?@C' G= ' > ' A1'=' =C @? ' A1' F@' G= F' A1' ' A?@ '$ 1AC%' = J ?>' F= ' F@' @ @C' F=E' J AC@' F=?'=' I=C@' F=C>@%' =?E' G= ' F@' I= @@' A1' %' @ 'F ' D@ = 'DCAD@C '= ' F' E E'?A 'D '=?' @?E' A' F@' >@?@C= 'DCAD@C 'A1' F@' C @' AG?@C';' =?E' aBF@?' F@' @?' F@' G= F' =G= ' A' =' F CE' D@C A?%' =EEC@ @E' A' '@' C @' AG?@C%' ?T @?E ?>' F' D@C A?' A' E@ B@C' ' A' F@' C @' AG?@ !%' ?E' F= ' F CE' D@C A?%' F@' DA J = @C%' C@ @ B@E' ' 1AC' F= ' D CD @%' F@' @ @CH' DA @ A?' =?E' D@ = ' DCAD@C ' @= @E%' =?E' F@ '>@?@C= ' DCAD@C ' A1' F@' C @' AG?@C' I@ = J @' @? F@ ' ? ? J I@C@E%' =?E' EC@G' A' ' F@' DA @ A?%' ? @ ' F@' DA J = @C' I@ = J @' F@' I= @E';' I ' F ' F@' E E'?A %' 1AC' F@' F=E' A? ' =' F=C>@%' =?E' @' I@ = J @' F@' @CB=?' A1' F@' C @' AG?@C' 1AC' F@' D CDA @' A1' E@ B@C ?>' ' A' F J';' =?E' F ' DA @ A?' G= ' F@' DA @ A?' A1' F@' C @' AG?@C%' =?E' A E' ?A ' I@' E B@ @E' I ' F@' AC A ' = ' A1' F@' DC A?@C%' 1<3

L(+<:<*/ '4*# 234+ ' ')')22:' 12+* 3# 12J/(')' 4' 7 49' =*+10' +' :' "+# ')' 49/' "(1/' 2& =*+10

DA?' =?' ?E J @?' 1AC' @= ?>' A= %' ' =DD@=C@E' F= ' F@' DCA @ AC' F=E' =' A @C %' =?E' IA F' A=' '=?E' J = ' A=' AC' = <' G@C@' A E' I ' C@ = ' F@C@%' I ' ?A?@' N@] @D ' A' DC B= @' AJ@C d' G= ' = AG@E' A' I@' =<@?' =G= ' ? ' ' F=E' I@@?' D= E' 1AC' ;' =?E' GF@?' F@' =C ' G@C@' A=E@E%' F@ ' G@C@' =<@?' A' =' G@ >F ?>' J = F ?@' ?' F@' A @C ' =CE%' GF@C@' F@' G@ >F ' =?E' DC @' A1' F@' A= ' F=B ?>' I@@?' = @C = ?@E%' F@' A= ' G@C@' D= E' 1AC' A' F@' @C<' ?' F=C>@' A1' F@' G@ >F ?>' J = F ?@%' GF F' ' = ' F@' @? C=? @' A1' F@' =CE%' A' F= ' =C ' @? @C ?>' =?E' D= ?>' ' ' A1' F@' =CE' F=B@' A' ZA= ' F@' J = F ?@ ' F@%' DC A?@C' G= ' = b = ? @E' G F' F@ C@> = A? %' =?E%' <?@G' F= ' F@' GA E' ?A ' I@' D@CJ @E' A' =<@' A= ' A ' A1' F@' =CE' ? ' F@ 'F=E' I@@?' G@ >F@E' =?E' D= E' 1AC' = ' =IAB@' J @? A?@E ' F@' DC @' A1' A1 ' A= ' G= ' =IA ' EA I @' F= ' A1' = < ' F@' DC A?@C%' ICA >F ' F ' =C ' A' F@' A @C ' =?E' = E%' 7 'G=? ' =' A=E' A1' F@' I@ ' A1 ' A= %H =?E' F@' =C ' G= ' A=E@E' G F' F@' I@ ' A1 ' A= ' I ' =' @CB=? ' A1' F@' DCA @ AC%' = @E' I ' F@' DC A?@C ' F@' @CB=? ' F@?' G@? ' =G= %' =?E' F@?' F@' DC A?@C' D = @E' =' b =? ' A1' = <' 1CA J' =' F@=D' A1' = <' A?' F@' AD' A1' F@' A=E' A1' A1 ' A= %' F@C@I ' AB@C ?>' ' A @C%' =?E' J =< ?>' F@' =C ' =DD@=C' A' I@' A=E@E' G F' = <' A? ' F@' DC A?@C' F@?' AA<' F@' =C ' A' F@' G@ >F ?>' J = F ?@%' =?E' F@' @C<' = E' A' F J%' 7 & F= ' F=B@' A ' >A V%H @' = E%' 7 = < %H F@' @C<%' @@ ?>' = <' A? ' ?' F@' =C %' G@ >F@E' %' =?E' F=C>@E' F@' DC A?@C' 1AC' F@' A=E' = ' = <%' =?E' F@' DC A?@C' D= E' F' F=C>@' =?E' G@?' =G= ' G F' F ' =C ' %H F@' J ' D= E' I ' F@' DC A?@C' G= ' A?T E@C=I ' @ ' F=?' F@' C@= ' DC @' A1' F@' A=E ' ' G= ' I J @E' F= ' 1' F@C@' G= ' =? 'A11@? @' AJ J @E%' 'G= 'AI = ? ?>' DCAD@C ' I '1= @' DC@ @? @ ';' F@' A C 'AB@CC @E' F@' AIZ@ A?%' =?E' A E' Fu' Z C ' F= ' 1' F@ 'G@C@' A1' AD ? A?' F= ' F@' DC A?@C' = ' F@' J @' F@' G@?' A' F@' A @C '1AC' F@' A=' ? @?E@E' 1C= E @? ' A' =<@' F@' =J@'=G= b' =?E' =DDCADC = @' ' A' F ' AG?' @%' A?' D= ?>' 1AC

" B /)' · +#' ' ' ' ' M' GH.' 9/' = ;6 */' +' :' 4(6 /' +'=7/(' 42' 49/' 236/1P 4 2'' 7+=' c* |4' 49/' "(2"/(4# '' 49/' 7+419' 7+=' '24' "+ 4/:' 7 49' / 49/(' 3# 49/' 2(' 49/' "2=4 ; +=4/(' ? &2(' 49/#' '/ 49/(' 49/' "24J/(' '2(' 49/' '4/' 4 2'' 42' "+(4' 7 49

+' #49 ')' ; 2(/' 49+' ' 49/' "2==/== 2'' 2& 49/' 7+419' /' /)' &' '1/ '4' :' /'' ' 'IYI' 7:' ' V' ' ' : :*/42' ' " :' "' C-C:' ! L & :' '#..' 'L +' N :' L

1= @FAAE ' ?'?A '= A ? ?>'1AC' ='DAC A?'A1' @' >C=B@ ﾌ =?E' F= ' F@' =J A ?' G= ' =I A ' i 8 ﾌ =?E' F@' A? E@C@E' F= ' F@' G= ' R ?E@I @E' A' F@' C @@ '1AC' F= ' J ' @' F=E' D= E' i8 ' AEE' A?' = A ?' A1' F@' DDA @E' E@1 @? ﾌ =?E' F@' @C<' >=B@' F J' =' C@ @ D ' 1AC' ' A?' = A ? R' & >F J=?ﾌ ﾌ = J@E' F= ' F@' DCAD@C ' ?' F@'>C=B@'D= @E' A' F@' C @@ 'GF@?' DA ? @E' A 'I ! F@' DC A?@C ﾌ =?E' @1 ' ' A' F@'Z C ' A' = 'GF@ F@C ﾌ = ' F@' J@' F@' F=E' ' =C @E' =G= ﾌ F@' ? @?E@E' 1 = E @?' ' A' E@DC B@' F@' C @@ 'A1' F@'DCAD@C ' ?' F@'>C=B@ 'NWd' '

34+ ' ')' : /P * J/(# 2(; /(ﾆ &2(')22 :ﾆ 3# ; /+ 'ﾆ 2& +' K72(49'/ﾆ 19/T</

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secutor put down a number of bank notes for the purpose of their being so exchanged. The prisoner took up the notes and made away with them. And this was holden to be larceny, if the jury believed that the prisoner intended to run away with the notes, and not to return with the gold.

Soon afterwards the prisoner took an occasion to make a display of his gold, when a conversation respecting it ensued between him and the prosecutor; the prosecutor expressing a wish that the prisoner would oblige him by letting him have some gold in exchange for notes and silver, not at an advanced price, but at its legal currency. The prisoner stated that if it would be any accommodation to the prosecutor, and the prosecutor would do him the same kindness on a future occasion, he would let him have some gold for his notes and silver; and the exchange took place to a small amount. The prisoner then observed, that if it would be of any material service to the prosecutor, he would procure him a considerable further quantity of gold, if the prosecutor would lay down notes to the amount. Upon this the prosecutor put down thirty-five pounds, in bank notes, for the purpose of receiving back their amount in gold; and the prisoner took them up, and went out of the house with them, promising to return immediately with the gold. The prisoner did not return. Upon these facts, Wood, B., held, that the case clearly amounted to larceny, if the jury believed that the intention of the prisoner was to run away with the notes, and never to return with the gold: and that whether the prisoner had, at the time, the *animus furandi*, was the sole point upon which the question turned; for if the prisoner had, at the time, the *animus furandi*, all that had been said respecting the property having been parted with by the delivery was without foundation, as the property, in truth, had never been parted with at all. The learned Judge further said, that *a parting with the property in goods could only be effected by contract, which required the assent of two minds:* but that in this case there was not the assent of the mind, either of the prosecutor or of the prisoner; the prosecutor only meaning to part with his notes on the faith of having the gold in return; and the prisoner never meaning to barter, but to steal. (*i*)

The prisoner obtained money from the prosecutor on the pretence that he would pay a bill for him with it, and appropriated it; and he was held guilty of larceny.

Upon an indictment for larceny, it appeared that the prosecutor owed some money to Mr. Staines, and that he said to his servant, in the hearing of the prisoner, 'George, you must go to Mr. Staines, and pay him this money;' and thereupon the prisoner said, 'I will take it for you, I live only six doors from Mr. Staines.' Induced by the offer of the prisoner, the prosecutor gave him £1 12*s.* to carry to Mr. Staines in discharge of the debt. The prisoner's statement was altogether false, and he converted the money to his own use. The jury were told that the prisoner was guilty of larceny if they were of opinion that he obtained the money by a trick, and meant at the time to appropriate it to himself; but that if he took it from the prosecutor *bonâ fide*, and afterwards converted it to his own use, it was not larceny. (*j*) The jury found that the prisoner had obtained the money by a trick, intending at the time to appropriate it to his own use, and convicted him; and, upon a case reserved, it was held that the case

(*i*) Oliver's case, *cor.* Wood, B., cited in Walsh's case. 4 Taunt. 274. 2 Leach, 274.

(*j*) This latter position seems erroneous; for the prisoner had only the custody and not the possession of the money, and was therefore guilty of larceny in disposing of it. See Reg. *v.* Thompson, L. & C. C. C. 225, *ante*, p. 135.

But where upon an indictment for stealing a shilling, it appeared that the prisoner went into a shop, and asked for half an ounce of tobacco, and pitched down half a crown on the counter for it; the shopman put down two shillings on the counter, and, whilst he was counting the halfpence out of the drawer, which was partly open, the prisoner picked up the two shillings off the counter, and appeared to throw them into the till, and asked for four sixpences instead of them; though suspecting that there was something wrong, the shopman gave the prisoner one shilling, two sixpences, and fourpence halfpenny. On examining the drawer, it was found that the prisoner had only thrown in one shilling and pocketed the other: it was held that this was not larceny, but obtaining the money by false pretences. (*o*)

Where a party is trusted with a sovereign to

And where, upon an indictment for stealing a sovereign, it appeared that the prosecutor and the prisoner having entered a

and put that on the counter, expecting she was to receive two shillings of the prisoner's money. The prisoner wishes to have the two shilling piece, and he is to give a shilling and sixpence in silver and sixpence in copper for it. Did the prosecutrix part with the property in the two shilling piece at the moment she put it on the counter? Clearly not. She expected to receive two shillings of the prisoner's money, and if her attention had not been distracted, she would have stopped the prisoner before he left the shop. The placing of the money on the counter was only one step in the transaction. The taking up of the two shilling piece by the prisoner could not affect the question, whether the prosecutrix intended to part with the property in the money, and would not make the transaction complete. Nor again, would the taking up of the other money by the prosecutrix affect that question or complete the transaction. She is putting it into the drawer when she discovers her mistake; the transaction is not then completed, and she has not received the change which she expected to receive when her attention is taken off and the prisoner quits the shop. I think her property in the florin continued until she received what she expected to receive. It appears to me to be the same case as if the prisoner, with 18*s.* in his hand, had asked her to give him a sovereign in change, and she lays the sovereign on the counter and he the silver. He takes up the sovereign and leaves the shop before she has counted the silver; and then she counts the silver, and discovers that she has only 18*s.* instead of 20*s.* I think that would be larceny. The cases cited by the counsel for the prosecution bear out this view of the case. Then, as to The Queen *v.* Jackson, *ante*, p. 148, referred to by my Brother Pigott, that was a case of a pawnbroker's servant who delivers a chattel to the prisoner, receiving in exchange what he believes to be a parcel of diamonds, does not open the parcel at the time, and does not discover that they are not diamonds; then the accused leaves the shop, and the parcel is put away. There the transaction is complete; all took place and was done before the chattel was delivered over, with the knowledge that the prisoner was about to depart with it. But no such distinction as that between larceny and obtaining property by means of false pretences exists in this case. The putting of the money on the counter was no final delivery to the prisoner of the coin. I think, therefore, the conviction should be sustained.' See R. *v.* Twist, 12 Cox, C. C. 509.

(*o*) Reg. *v.* Williams, 7 Cox, C. C. 355. Martin, B., said, 'The case against the prisoner here is that he pretended that he had returned the whole when he had only returned one shilling.' This might apply to the last shilling given to the prisoner, and he might have been indicted for obtaining that by false pretences; but as to the shilling pocketed, the case is otherwise; that was put down on the counter in change for the good half-crown, and, until then taken into the hands of the prisoner, remained in the possession of the prosecutor, the counter being in his possession. In Chambers *v.* Miller, 13 C. B. (N. S.), 125, where a banker, on a cheque being presented, placed the amount on the counter, and the presenter of the cheque drew the money towards him, counted it over once, and was in the act of counting it a second time, it was held that the property in the money had passed. But Byles, J., said, 'I should be inclined to hold, as a matter of law, that so soon as the money was laid upon the counter for the holder of the cheque to take, it became the money of the latter.' No other judge intimated any such opinion, but all relied on the taking possession of the money by the presenter of the cheque; and, with all deference, money on the counter of a banker is just as much in his possession as if it were in his pocket. It is therefore submitted that the prisoner in this case was guilty of stealing the shilling he put in his pocket. C. S. G.

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F@' DC A?@C' G=' F@' E= >F @C' A1' F@' DCADC @ AC' A1' =' [' J @CC > [' CA ?E%' =?E' G=' ?' F=C>@' F@C@A1' F@' DC @' A1' =' C E@' ?' F ' J= F ?@' G=' A?@' D@??ZX' 1AC' @= F' D@C A?' F@' DCA @ C]'>A ' ? A' ' =?E' F=?E@E' A' F@' DC A?@C' =' AB@C@ >?' ?' D= J @?' A1' F@' C E@%' = < ?>' 1AC' F@' F=?>@' F@' DC A?@C' >=B@' F@C' @ @B@?D@? @%' =?E' F@' J @CC ' >A CA ?E' I @ ?>' =IA ' A' =C %' F@' = E' F@' GA E' > B@' F@C' F@' C@ ' A1' F@' F=?>@' GF@?' F@' C E@' G=' AB@C' F@' DCA @ C]' = T @? @E' A' F %' =?E' =IA ' @?' J ? @' =1 @C;' GF@?' F@' C E@' G=' AB@C%' 1A ?E' F@' DC A?@C' = @?E ?>' A' =' FAA ?>' >= @C %' =?E' = <@E' F@C' 1AC' F@' F=?>@%' GF@?' F@' C@D @E' F=' F@' F=E' A? ' C@ @ B@E' =' F ?>%' =?E' E@ ?@E' A' > B@' =? ' JAC@' F=?>@' F@' ?E ? @?' F=C>@E' F@' DC A?@C' G F' @= ?>' ? ?@ @@?' F ?> ' ?' J A?@ ' A1' F@' J A?@ ' A1' F@' DCA @ C]' F@' DC A?@C' G=' A?B @E' A1' @= ?>' F@' ? ?@ @@?' F ?> ' $ F@ E%' I ' =' J =ZAC ' A1' F@' Z E>@ %' F=' F@' A?B A?' G=' GCA?>' =?E' J ' I @' b = F@E%' Nbd

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it; the prosecutor gave him the receipt, which the prisoner took, and put two sovereigns into the prosecutor's hand and immediately went away; and upon the prosecutor afterwards asking him for the remainder of the money, he said he had got his receipt and he should not pay it. The prosecutor stated that at the time he gave the prisoner the receipt he thought the prisoner was going to pay him the rent; that he should not have parted with the receipt unless he had been paid all the rent; but that when he put it in the prisoner's hands he never expected to have the receipt again, and that he did not want the receipt back again, but wanted his rent to be paid. For the prisoner it was submitted that this was not a larceny. For the prosecution *Oliver's case* (*s*) was cited as in point; and it was contended that it was clear the prosecutor never intended to part with the receipt unless he was paid all the rent: the prisoner, on the contrary, never intended to pay the rent, and obtained the receipt by means of fraud: the property in the receipt, therefore, was not changed, and the case amounted to larceny. Coleridge, J., 'I think it is a larceny. The prisoner had removed his goods off the premises, so that the prosecutor could not distrain; and then the prisoner induces the prosecutor to part with the receipt by asking to look at it, and it is delivered to him for that purpose. It is quite clear also, that the prosecutor never intended to give the prisoner the receipt till he was paid all the rent, and I think the payment of the two sovereigns makes no difference.' (*t*)

The prisoner, on pretence of paying a bill, got possession of a blank receipt, filled it up and got it signed, and then took it away without paying the money, and it was held not to be larceny.

Upon an indictment for stealing a piece of paper, whereon was impressed a two-shilling-and-sixpenny receipt stamp, and a piece of paper, it appeared that the prisoner managed his father's business, and that he employed Harries as a mason to build some farm-buildings, and paid him various sums as the work was going on by cheques drawn by his father. When the work was completed, Harries had it measured and valued, and sent an account to the prisoner's father, shewing a balance of £49 3*s.* 4*d.* due to Harries, which Harries pressed the prisoner to pay: and he said if Harries and one Williams, who had assisted Harries in the work, would come to his father's house and bring a stamped receipt with them, he would settle with them; they accordingly went, Williams having previously purchased a two-and-sixpenny receipt stamp with money given him by Harries. On their arrival they found the prisoner sitting at a desk, with papers before him, and his father sitting in another part of the room. The prisoner said, 'By this account, there appears to be still due to you a balance of £49 3*s.* 4*d.*, beyond the £125 which you have had. Have you brought a stamped receipt?' Williams replied that he had, and, taking the blank stamp out of his pocket, handed it to the prisoner. The prisoner then said, 'You have not written it.' Williams asked the prisoner to write it. The prisoner then wrote on the stamp, and read it aloud as a receipt for £174 3*s.* 4*d.*, namely, for £125 previously paid, and £49 3*s.* 4*d.* the balance. The prisoner did not give the stamp back either to Harries or Williams, but asked Harries to come to the desk and put his name to it, which he did without removing it from the desk.

(*s*) *Supra*, note (*i*), p. 170. (*t*) Reg. *v.* Rodway, 9 C. & P. 784, and MS. C. S. G.

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judges were unanimously of opinion that the prosecutor had not such a possession of the paper as would enable him to maintain trespass. It was never intended that he should retain it, but it was merely handed over for him to write upon it; and therefore the offence was not larceny. (*w*)

Property obtained by means of cards, bets, &c.

Where it appeared that the prisoners decoyed the prosecutor into a public-house, and there introduced the play of cutting cards: and that one of them prevailed upon the prosecutor (who did not play on his own account) to cut the cards for him; and then, under pretence that the prosecutor had cut the cards for himself, and had lost, another of them swept his money off the table and went away with it: it was considered to be one of those cases which should be left to the jury to determine *quo animo* the money was obtained, and which would be felony, in case they should find that the money was obtained upon a preconcerted plan to steal it. (*x*)

The prosecutor was drawn in to deposit twenty guinea notes on a bet that one of the prisoners could not guess right three times successively on the hiding of a halfpenny by another of the prisoners under a pot: he put the notes in the hands of one of the prisoners, and then the other guessing right, the notes were handed over. The question was left to the jury whether, at the time the notes were taken, there was not a plan between the prisoners that they should be kept, under the false colour of winning a bet; and the jury so found. Upon a case reserved, the judges held that the conviction was right, because at the time of the taking the prosecutor parted with the possession only. (*y*)

Patch's case. The prisoner, with some accomplices, being in company with the prosecutor, pretended to find a valuable ring. The prosecutor was to have a share of the pretended value of it, and was prevailed upon to deposit his watch, &c., and to take the ring until his share of the value should be paid. The accomplices of

The prisoner was indicted for stealing a silver watch, steel chain, &c., two pieces of foreign coin, and seven shillings in money, the property of J. Bunstead. The prosecutor proved that the prisoner and two other persons, who made their escape, had joined him in the street; and that, after walking a short space with him, one of them stooped down and picked up a purse, which, upon inspection, was found to contain a ring, and a receipt for £147 purporting to be the receipt of a jeweller for 'a rich brilliant diamond ring.' The prisoner proposed that they should go into some public-house to consider in what manner their respective portions of this prize should be divided, and they went accordingly. Various modes of distribution were then suggested; and at length the prisoner asked the prosecutor if he would take the ring, and deposit his money and his watch as a security to return it upon receiving his portion of its value. The prosecutor assented to this proposal; and signed a written agreement dictated by the prisoner, to the effect that when the prisoner, or either of the other two men, returned the watch and money and seventy pounds, he would re-deliver to them the purse and the ring. The prose-

(*w*) Reg. *v.* Smith, 2 Den. C. C. 449.

(*x*) Rex *v.* Horner, 1 Leach, 270. Cald. 295, S. C. The case was one of an application to the Court of King's Bench to bail the prisoners on the ground that the charge against them amounted only to a *misdemeanor*. Probably it would have been considered as making an essential difference if the prosecutor had been playing himself at the time, and had parted with his money under the idea that it had been fairly won. See Rex *v.* Nicholson, *ante*, p. 146.

(*y*) Rex *v.* Robson, MS. Bayley, J., R. & R. 413. This differed the case from Rex *v.* Nicholson, *ante*, p. 146. See Reg. *v.* Hudson, Bell, C. C. 263, vol. 3, '*Conspiracy*.'

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the ring; desiring that he would meet him at the same place, on the next morning at nine o'clock, and promising that he would then return to him the twenty guineas and the four doubloons, and also give him one hundred guineas for his share of the ring. It was also appointed that the prisoner should be there, and agreed that the prosecutor and the stranger should give him a guinea each for his trouble. The prisoner and the stranger went away together. The prosecutor attended the next morning pursuant to the appointment, but neither of the other parties came. The ring was of a very trifling value. It was left with the jury to consider, upon these facts, whether the prisoner and the stranger were not confederated together, for the purpose of obtaining money, on pretence of sharing the value of the ring, and whether he had not aided and assisted the stranger to obtain the money by the means which were used for that purpose. And the jury being of opinion he was so confederated with the stranger, and aiding and assisting him, found the prisoner guilty; and, upon a case reserved, nine of the eleven judges present were of opinion that the guineas and the doubloons were deposited in the nature of a pledge, and not as a loan; so that, though the *possession* was parted with, the *property* was not; (more especially as to the doubloons, which the prosecutor clearly understood were to be returned the next day in specie,) and therefore as the prisoner had obtained them with a fraudulent intent to apply them to his own use, the offence became a felony, from the *intention with which he gained the possession.* And they also held that, as the prisoner and his companion were acting in concert together, they were equally guilty. The other two judges thought that the doubloons were to be considered as money, and that the whole was a loan on the security of the ring, which the prosecutor believed to be of much greater value than the money he advanced upon it, and that therefore he had voluntarily parted with the *property,* as well as the possession. And they said that when money was delivered by a man on such an occasion, it was not in his contemplation to have the same identical money back again. (*a*)

The prisoner induced a person to deliver bank-notes to him, by the fraud of *ring-dropping*, and upon the usual agreement that the notes should be returned, and the value of the jewel divided. Held to be larceny.

The prisoner was indicted for stealing several bank-notes of the value of 100*l.*, the property of J. Smith. M. Smith, the prosecutor's wife, stated, that as she was going along the street the prisoner stooped down, picked up a small parcel, and said that he had got a prize: upon which she cried, 'Halves,' and said it was usual to give half of what was found. They went together into St. James's Park, where they examined the parcel in the presence of another man, (who appeared to be an accomplice of the prisoner's) and found in it a locket with a large stone, and a paper purporting to be the receipt of a jeweller for 250*l.* for a diamond locket. The prisoner said his name was Smith, that he was the captain of a ship, and that he would go to a friend's house, where his cargo was, and bring 100*l.* towards paying the witness her share. He went accordingly, was absent about fifteen minutes, and when he returned he said that his friend was not at home. After some further proposals respecting the disposal of the locket, it was at length agreed between them that the locket should be

(*a*) Moore's case, 1 Leach, 314. 2 East, P. C. c. 16, s. 107, p. 679. Marsh's case, 1 Leach, 345, S. P.

Robson the party had only the possession of the money given to him as a stakeholder. When this prosecutor parted with his 7*l.* he never intended to have it back again, but meant to sell the chain and seals for himself. The prisoners must be acquitted.' (*e*)

Persons acting in concert.

If several act in concert to steal a man's goods, and he is induced by fraud to trust one of them in the presence of the others with the possession of the goods, and then another of the party entice the owner away, in order that the party who has obtained such possession may carry the goods away, all will be guilty of felony, the receipt by one under such circumstances being a felonious taking by all. Standley, Jones, and Webster conspired to get some money from M'Laughlin, and they pretended that he could not produce 100*l.*, upon which he produced it in notes, which Jones took to count and afterwards handed to Standley, and Standley and Webster pretended to gamble for them, Jones then beckoned M'Laughlin out of the room, and Standley and Webster immediately decamped with the money, and all the three afterwards shared it. Upon a case reserved, the judges were unanimous that this was larceny in all the three. (*f*) In another case County and Donovan planned to rob the prosecutrix of some coats, and County got her to go with him that he might get some money to buy them of her, and she left the coats with Donovan, who immediately absconded with them; and, upon a case reserved, the judges held the receipt by Donovan to be a felonious taking of the coats by both. (*g*)

The prisoner obtained a horse under pretence of hiring it to take a journey, and shortly afterwards sold it. Held to be larceny, the jury finding an intent to steal the horse at the time of hiring it.

The prisoner was indicted for stealing a gelding, the property of J. Houseman. The prosecutor was a livery stable keeper in Crown Street, Soho; and on the 4th October 1785, the prisoner, who was a post-boy, applied to him for a horse, in the name of a Mr. Eley, saying, that there was a chaise going to Barnet, and that Mr. Eley wanted a horse to accompany the chaise, to carry a servant, and to return with the chaise. The gelding described in the indictment was accordingly delivered to him by the prosecutor's servant. The prisoner mounted the horse; and, on going out of the stable yard, and meeting a friend of his, who asked him where he was going, he said that he was going no further than Barnet. He accordingly proceeded towards Tottenham-court Road, which leads to Barnet, and also, though in some degree circuitously, to Mr. Eley's house. This transaction took place about nine o'clock in the morning; and between three and four o'clock in the afternoon of the same day the prisoner sold the gelding in Goodman's Fields for a guinea and a half, including the bridle and saddle. The horse appeared to have been ridden very hard, and his knees were broken very badly. The purchaser almost immediately disposed of his bargain for fifteen shillings. On putting this case to the jury, it was stated by the Court that the judges in *Pear's case*, (*h*) under circumstances similar to the present, had determined, that if a jury be satisfied, by the facts proved, that a person, at the time he

(*e*) Reg. *v.* Wilson, 8 C. & P. 111. The prisoners were afterwards tried and convicted for a conspiracy.

(*f*) Rex *v.* Standley, MS. Bayley, J.; R. & R. 305.

(*g*) Rex *v.* County, East. T. 1816. MS. Bayley, J.

(*h*) Pear's case, 1 Leach, 212. 2 East, P. C. c. 16, s. 112, p. 685.

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R*B' /) ' ' (220=' E' ' ' ' GNA' ==<4' ' 7' 43+4' 49 =' 1+=/' =' +11<(+4/*#' (/P "2(4/ : ' 49/' 12((/14' /=' 2& 49/' : /1 = 2 ' ' =// ; =' * +3*/' 42') 9/+4' :2<34' 9/' T</=P 4 2 ' &2(' 49/' 6<(# ' ' =<19' 1+=/=' =' 79+4' 7+=' 49/' ' 4/ ' 4 2 ' ' 2& 49/' "(=2' / (' ' ' N ' 9/' 234+ ' / :' "2==/== 2 ' ' 2& 49/' 19+44/*^ 27' 49/' +14=' 2& 49/' "(=2' / (' =<3=/T</ ' 4 42' 49+4 4 ; /' +(/' 2 '*# ; +4/ (+* &2(' 49/' "<("2=/' 2& / ' +3* ') ' 49/' 6<(# 42' : /1 : /' 7* +4' 9 =' ' 4/ ' 4 2 ' ' 7 +=' +4' 49/' 4 ; /' 2&49/' 4+0 ') ' ' ' /4<+*' 12 ' J/(= 2 ' ' =' < ' : 2<34/ : *# 12) / ' 4' /J : / ' 1/' 49+4' 49/' 19+44/*' 7+=' 2( ) '+**# 234+ ' / :' &2(' 49+4' "<("2=/' ? 3<4' 4' =' 2 ' *# /J : / ' 1/' ? +' :' 4' ' =' /+=# 42' =<)) /=4' 1+=/=' /T<+**# =4(2 ')*# ' : 1+4 J/' 2& +' &/*2 ' 2<=' ' 4/ ' 4' +4' 49/' 4 ; /' 2&49/' 4+0 ') ' ` 49<='=<"" 2=/' +' "(=2 ' / (' 9+ :' 9 (/ :' +' 92(=/' &(2 ; ' ' &2(' +' : +# ' +' : ' 9+ :' 4+0/ ' ' 4' ' 42' +' : =4+ ' 4' "+(4 2& 49/' 12<' 4(#' +' : ' 49/(/' <=/ :' 4' &2(' 9 =' 27 ' ' "<("2=/=' &2(' +' *2 ') ' "/ (2 : ' +' :' 3/ ') ' +' "P "(/9/ ' : / :' 9+ :' 12 ' &/==/ :' 49+4' 9/' 234+ ' / :' 49/' 92(=/' &(+<: <*/ ' 4*# 7 49' ' 4/ ' 4 42' 0//"' 4' &2(' 9 =' 27 ' '<=/ ' +' : ' 792**# 42' : /P "(J/' 49/' 27 ' / (' 2&' 4' ' +' :' 49+4' 9/' 9+ :' ; +: /' &+*=/' (/"(=/ ' 4+4 2 '=' &2(' 49+4' "<(P "2=/' ' 12< ' 4' 3/' 12 ' 4/ ' : / :' 49+4' 49/(/' 7+=' ' 2' /J : / ' 1/' 42')2' 42' 49/' 6<(# 2& +' ' 4/ ' 4' 42' =4/+*' +4' 49/' 4 ; /' 2&49/' 4+0 ') ' ' 2' ' ' 49/' "(' 1 "+*' 1+=/' 4' =' =<3 ; 44/ : 49+4' +*492<) 9' ' 2' +14<+*' 12 ' J/(= 2 ' ' 4220' "*+1/ ' =4 ** 49/(/' 7+=' /J : / ' 1/' &2(' 49/' 6<(# 49+4' 49/' 92(=/' + ' :')) ' 7/(/' 234+ ' / :' 7 49' ' 4/ ' 4 42' 12 ' J/(4 49/ ; ' 42' 49/' "(=2 ' / (S' <=/ ' 4' =// ; =' : && 1<*4' +*=2' 42' =/' 927' 49/' &+14' 49+4' (' (3/*# : ' ' 24' ' 4/ ' :' 42' 12 ; "*/4/' 49/' 12 ' 4(+14' 12<*:' J+(# 49/' /&&/14' 2& 49/' "(=2 ' / (S' +14=' ? 49/' "(=2 ' / (' 9+ :' : 2 ' /' +** 2 '' 9 =' "+(4' 42 12 ; "*/4/' 49/' 12 ' 4(+14' + ' :' +=' +) + ' =4' 9 ; ' 4' ;) 94' 7 /*# 9+J/' 3/ / '' 9/*:' 49+4' 49/' 12 ' J/(= 2 '' 7+=' 12 ; "*/4/ ? '' 49/' =+ ; /' 7+# +=' 4' 9+=' 3 / / '' 9/*:' 49+4' 49/' 2&&/ ' 1/' 2& 3(3/(# =' 12 ; "*/4/' 79/(/' J ') J/=' ; 2 ' /# 42' ' 42' ' :<1/' 9 ; ' 42' J24/' &2(' + 1+' : :+4/ ' +' ;' ' +)(//= =2' 42' :2' +*P 492<) 9' 92' ' /J/(' '4/ ' :=' =2' 42' J24/ ' / ' =*27' &' L+71/44' H K :' ' ' A. ' +(: ') ' & ' 420/=' G ' ' ' GHH' // +*=2 "/ ' 1/$' 1+=/ ' ' "' .E. ' 79/(/' 49/(/' =// ; =' 42' 9+J/' 3/ / '' ' 2' =+*/ ' ' ' ! W b' ! *2<1/=4/(' < ; ' ==' .E.A' ' ' ' ! "B' 24/' "*B. ' W ; b' "B /) ' . ' +'=2 ' ' .' 2V' ' ' EG W2b' J .' "' .AY W" b' .' +70' ' ' 1' HH' =' .G' G +=4' ' ' 1' .Y' =' NY' " ' YYM

@= = FAC @ =<@ A = " E ! =?E F=B ?> F@C@I DCA C@E F@ FAC @ A I@ E@ B@C@E A F J I F@ F@C 11 ! E@ F J =G= ; AC 1 = J=? ? @?E ?> A @= F@ >AAE A1 =?A F@C 1C= E @? E@ B@C =? @Z@ J@? =?E I A I = ? ?> Z E> J @? => = ? F@ = = @Z@ AC >@ DA @ A?A1 F FA @ =?E =<@ F >AAE ; ? IA F F@ @ = @ F@ =< ?> G = J A ? A =C @? N> A 1 ?E@C DC@ @] AC A A C A1 = 6E!6 > 626 >& @E A =1 @C =? A =GC =?E@ ?@ AI @ ?@E => = ? = B I @ J =? F >AAE I@ =<@?G F = 1@ A? A ? @? G I@ 1@ A? NCd

?= = @ F 1E@ C D A? GF@C@ F@ DC A?@C G@C@ ?E @E !22:= 234+ / : 1AC IC@=< ?> F@ FA @ A1 (=? @C D ?> F G 1@ ?1@=C =?E ZH f F= E 7
@= ?> >AAE F@ DC A?@C ? @?E ?> A C 1 @ = FA @ ?GF F = * C =? @C B@E =D=C 1CA J F@C F I=?E G@? A =?= AC?@ =?E DC@ @?E ?> F= * C =? AC G= @?=? A A?@ A1 F@ J =?E ?=CC@=C 1AC C@? AI = ?@E DA @ A?A1 F@ FA @ I J @=? A1 = 1C= E @? @Z@ J@? ; =?E = F@ = J @ J @ =CC@ @E * C =? @C I B C @ A1 = GC A1 = = =?E = @E F@C A I@ =CC @E A DC A? F@ DC A?@C F@?C 1 @E F@ FA @ =?E AA< =G= F@ >AAE AJ@ A1 GF F F@ F E = @C@E F@ J =C< A1 A F@C =?E A E F@ C@ & F@?F@ G@C@ b @ A?@E A? @C? ?> F@ @ = =?E = <@E GF= A A C A1 @ F@ F=E A F@ FA @ AC >AAE F@ A E DC@ @?E ?A?@ F@ C@= =?E ACE F=E C@ @ B@E F@ C@? A1 F@ FA @ 1AC J=? @=C =?E ?A C@? G= ?= =CC@=C " @ F@C A E F@ DC A?IC DC@ @?E A =? = @ A1 = A?> = ? * C =? @C F@ Z C G@C@ E C@ @E F= 1 F@ I@ @B@E F= F@ DC A?@C F=E EA?@ = F G F =?= @ J D A CAI F@ A >F A 1 ?E F@ J > GF F F@ = ACE ?> E E =?E IA F DC A?@C G@C@ @] @E N d

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8 : 3 5 ^ 3

= E EAG?? F@ A E IAA< F = 1 A?@ A @ F >AAE =?E 9/(f 49f =?A F@C 1 ?E F@J FA >F F@ A?B@C F@J 6 !& 4 *> "6 #! A 4+0) 9 3# F AG?@ @ ? ?A =C @? 1AC F@ 1 C =< ?> G= =G1 1 3 ?E F= 1 1 ?E F@ D C @ A1 C F@ F >FG= =?E =<@ =?E =CC = G= G F= F@ C J =? @ = = DCAB@ F@ 6 !& > *>"6 #! @ ? A 1@ A? N d F= F =G A?= F I@ @B@E F= F@ F@!>AAE A F=B@ I@@?? A I F@ AG?@C NLd F@ C @ A1 =G A?? F I Z@ @@J A I@ F= 1 = J =? 1 ?E (@ A1 =G >AAE F= F=B@ I@@?? = = A AC =C@ C@= A?=I DDA @E I F I F J A F=B@ I@@?? A =?E =DDCADC = @ F@J G F ? @? A =<@ F@ @? C@ EAJ ? A? AB@C F@J C@= I@ @B ?> GF@?F@ =<@ F@J F= F@ AG?@C =??A I@ 1A ?E ? A =C @? 1 F@ =<@

W f H '=4 .ME . +*/ AMD /* . 1 .Y = NY " YYM G /+13 IH . +7O 1 HH = .G G +=4 .MYI '24/R B
" B G +=4 1 .Y = NY " YYM R B H '=4 .ME . +7O 1 HH
' : =/f 1+=/= 2& + 3(/+O) + : / '4/( ) = G +1 3 4 4 ^ 5 W b
'' 3<()*+(# /&&/14/ : 3# &(+<: . W B . +*/ AMY G +=4 2 .Y
" E =' NN " YYI // <1O*/# &! (2== H
W=B /V L+((/ /* IH II G +=4 Y =' NY " YYM

F @ J ' G F ' F @ ' <@ ' ? @ ? ' FA >F ' A ' AC ' C@= A?=I ' DDA @E ' A '
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9<(32 ; [= 1+=/[F@ ' 1A AG ?>' = @' = @E ' F CIAC?H ' = @' ' =' @=E ?>' = FAT
C ' DA?' F ' IZ@

F@ ' DC A?@C ' G= ' ?E @E ' 1AC ' @= ?>' =' I=?<' ?A @ ' @ ' 1A ?E '
F@ ' ?A @' GF F ' F=E ' I@@?' = E@? = ' ECADD@E ' ?' F@ ' F >F ' CA=E '
F@C@ ' G= ' ?A ' ?= J @ ' AC ' J =C<' A?' ' ?E = ?>' GFA ' G= ' F@ ' AG?@C'
?AC ' G@C@ ' F@C@ ' =? ' C J =? @ ' = @?E ?>' F@4 1 ?E ?>' GF F '
YGA E ' @?=I @ ' F J ' A ' E AB@C ' A ' GFAJ ' F@ ' ? @ ' I3 A?>@E ' GF@?'
F@ ' D <@E ' ' D' ?AC ' F=E ' F@ ' =? ' C@= A?' A ' I@ @B@ ' F= ' F@ ' AG?@C '
<?@G ' GF@C@ ' A ' 1 ?E ' ' =>= ? ' F@ ' DC A?@C ' J @=? ' A ' =DDCADC = @ '
' A ' F ' AG?' @ ' GF@?' F@ ' D <@E ' ' D ' F@ ' E= ' =1 @C ' =?E ' I@1AC@'
F@ ' F=E ' E DA @E ' A1 ' ' F@ ' G= ' ?1ACJ @E ' F=I F@ ' DCA @ AC ' G= ' F@ '
AG?@C' =?E ' F=E ' ECADD@E ' ' = E@? = ' F@ ' F@?' F=?>@E ' ' =?E '
=DDCADC = @E ' F@ ' JA?@ ' A ' F ' AG?' @ ' F@ ' Z C ' 1A ?E ' F= ' F@'
F=E ' C@= A?' A ' I@ @B@' =?E ' E E ' I@ @B@' ' A ' I@ ' F@ ' DCA @ ACH '
DCAD@C ' I@1AC@ ' F@ ' F ' F=?>@E ' F@ ' ?A @ ' ' 5=C<@' ' E C@ @E ' =
B@CE ' A1 ' > ' I ' A?' A?1@CC ?>' G F ' * = @' ' F@ ' G= ' A1 '
AD ? A?' F= ' F@ ' AC > ?= ' =< ?>' G= ' ?A ' 1@ A? A ' =?E ' F= ' ?' F@ '
I @b @? ' E DA = ' A1 ' ' F@C@ ' G= ' ?A ' =< ?>' =?E ' F@ ' F@C@1AC@'
C@ @CB@E ' F@ ' b @ A?' 1AC ' F@ ' A? E@C= A?' A1 ' F@ ' Z E>@ ' F@ '
= @ ' G= ' ?A ' =C> @E '' I ' F@ ' Z E>@ ' >=B@ ' ' J F ' A? E@C= A?'
A?' = A ? ' A1 ' ' J DAC =? @' =?E ' F@ ' 1C@b @? ' A1 ' F@ ' A CC@? @ '
A1 ' = @ ' ?' AJ @ ' E@>C@@ ' J =C' =?E ' F@ ' AJ @GF= ' AI C@ = @ ' A1 '
F@ ' = FAC @ ' DA?' ; =?E ' 5=C<@' ' =1 @CG=CE ' E@ B@C@E ' F@ '
1A AG ?>' Z E> J @? ; ` 7 ?' ACE@C ' A ' A? @ ' F@ ' C J @ ' A1 ' =C @? '
F@C@ ' J ' I@ ' =' =< ?>' A1 ' F@ ' F= @ ' A1 ' =?A F@C 6 !& 4 ' *>"6 #! '
=?E ' =>= ? ' F@ ' G ' A1 ' F@ ' AG?@C ' F ' ' ?A ' F@ ' 1 ' E@1 ? A?'
A1 ' =C @? ' I ' A ' J F ' A? ' A1 ' ' = ' ' ?@ @ = ' A ' I@ ' C@1@CC@E ' A '
1AC ' F@ ' DC@ @? ' D CDA @ ' ' F@ ' @C J ' 6 !& 4 ' *> & #! ' ' A ' I@ '
?E@C AAE ' F@ ' ? @? A?' A ' =<@' ?A ' =' D=C =C NGd @ J DAC=C '
I ' =?' @? C@ ' EA J ? A?' AB@C ' F@ ' F= @ ' G FA ' =' A A C A1 ' C >F '
' F@ ' C @ ' A1 ' =G' 1A ?E@E ' A?' Z @ ' =?E ' C@= A?' ' F= ' 6 > '
4 ' *6 ! ' " >& ' ! !' & ' ! ' " 6 ' F@ ' > ' A1 ' F@ ' = @E ' J ' '
E@D@?E ' A?' F@ ' C J =? @ ' = ' F@ ' =DD@=C ' A ' F J ' =?E ' F@ ' C J@'
A1 ' =C @? ' =??A ' I@ ' AJ J @E ' ? @ ' F@ ' >AAE ' =<@?' =DD@=C ' A '
F=B@ ' =?' AG?@C' =?E ' F@ ' D=C ' =< ?>' J ' <?AG ' A1 ' I@ @B@! F= '
F@ ' =< ?>' ' =>= ? ' F@ ' G ' A1 ' F= ' AG?@C H ?E ' =1 @C @ =IAT
C= @ ' C@B @G ?>' F@ ' A E ' = FAC @ ' F@ ' @=C?@E ' =CA?' A? ? @E$
7 F@ ' @ ' A1 ' F@ @ ' = FAC @ ' ' F= ' < ' "> ' 4 *' 65 ' 4 ' <! '
>:C ' & ' 4 ' < ' <6 ' !*' #' & 6 ' *! # ' 244# ' <6 ' <6 ' : '
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4 ' 6 #' 6EE"4E"!6 ' < & ' 5! <' ! ' 4 ' 6 ' < ' !" '
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(< ' 45 "' 6 4 ' < ' *4>F!# ' ! ' ! ' 4 ' 6" ' ' > ' !*' < ' 6 '
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1]@E ' C @ ' b @ A? ' A1 ' AJ @' ? @ ' J = ' =C @' I ' ' G ' >@?@C= '
I@ ' = @C = ?@E ' GF@ F@C ' F@ ' = @E ' F=E ' C@= A?=I @ ' I@ @1 ' F= ' F@ ' !
AG?@C ' RA E ' I@ ' 1A ?E' I ' @B E@? @ ' A1 ' I ' DC@B A ' = b = ? =? @

I E =1 @CG=CE ' I@ AJ@ <?AG?% =?E A GFAJ F@ AG?@C G= ' D@@E ' J =E@ <?AG?% GF@?' F@ C@1 @E A > B@ ' D% G= ' F@ E'?A ' > ' A1 =C @? ' DA?' F@ = FAC ' A1 F< ' I > ' B ' F<>"<4" ' 7 >E"63 ' N d

?' = @ ' A1 F ' ?= C@% GF@ !@ F@ =< ?>' G= ' I ' *! #! 2 ' AJ@ A1 F@ CA?>@ ' C J =? @ ' A C@I ' F@ JD = A?' F= ' F =< ?>' G= ' 1@ A? A % G ' I@ FA @ GF F FAG F= ' F@'D=C ' J =E@ ' <?AG?' F= ' F@ F=E 1A ?E F@ DCADE ! % A = ' A J =<@ F J @ 1 C@ DA? I @ 1AC F@ B= @% ?' = @ F@ FA E I@ = @E DA?' I ' F@ AG?@C ; AC FA @ GF F FAG F= ' F@ @?E@=BA C@E A E AB@C F@ C @ AG?@C% =?E' <@D ' F@ >AAE ' ' ' J >F ' C@= A?=I ' I@ DT DA @E F= ' F@ C @ AG?@C A E'?A ' I@ 1A ?E% N=d

9/ ')22 :=
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3 *2=4

?' F@ A E IAA< ' ' ' = @E F= ' 1 =' J =?H ' FAC @ I@ >A ?L ?' F ' >CA ?E% AC DA?' F ' AJ JA?% =?E' =' 1a@C R?' =<@ ' ' 6&&4 *>"6 #! ' ' ' ?A 1 ?E ?>% I ' 1@ A? % 1<3 ?E' F= ' 1 F@ FAC @ C= ' ? A' =' ?@ >FIA CH ' >CA ?E' AC AJ JA?' AC F >FG= % N d ' ' 1@ A? ' ?' F J ' F= ' A' =<@ ' F@ FAC @ ' N _d 1 =' J =?' FA E F E@ =' D C @ A1 JA?@ ' ?' =' AC? JAG% =?E' F ' @CB=? ' 1 ?E ?>' ' FA E =<@ D=C ' A1 % F@ =< ?>' G ' I@ 1@ A? % 1 ' =DD@=C I ' C JT =? @ ' F= ' F@ @CB=? ' <?@G F= ' F ' J = @C = E ' F@C@% 1 3

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' /# 12+19 ; / ''
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' >@? @ J =?' @1 ' =' C ?<' ?' =' F= <?@ ' A= F% =?E' F@ A= FJ=?' AA<' =?E' A?B@C @E' ' A' F ' AG?' @' F ' G= ' FA E@?' A' I@ 1@ A? % A?' F@ '>CA ?E' F= ' F@ A= FJ =?' J ' F=B@ <?AG?' GF@C@ F@ AA<' D' F@ ' >@? @ J =?' =?E' F ' C ?<% =?E' GF@C@ F@ @ ' F J' EAG!?' ; =?E' F= ' F@ A >F ' F@C@1AC@ A' F=B@ C@ AC@E' ' A' F J ' N% d

RVZ ' ' ! #:/' ED ' ' ' ' .MD ' ' ' ' ' ' .HN ' ' +(4 ' ' Ö & 49/(/ 7/(/ '2 +<492(4# 2 '' 49/ " 2 '4 ' =92<* :' 9+J =+ :' 49+4 49 =' 7+=' +'&/*2 '# ' 9/(/ 7+=' +' 4+0 ')' +' :' 49/ 1 (1< ; P =4+ '1/=' =9/7' 49+4 49/ =2J/(/)'' 7+=' '24 +3+' :2 ' / : ' 9/ ' ' '49 ' 0 ' 49/(/ 7+=' /J P : / '1/ ' 2 +' 4+0 ')' +' :' /J : / '1/ 49+4 49/ 4+0 ')' 7+=' &/*2 ' 2<=' <"2 '' 49/ +<492(4# 2 9/ </// '' e 9(=42"9/(' :" ' .EA ' 49 ' Ö 9<432('=' 1+=/ 7+=' ( )94*# : /1 : / : ' 3<4 49/ (/+=2 '=') J/ '' &2(49+4 ; : /1 = 2 '' 9+J/ '24 3// '' +1T< /=1/ :' ' ' 9/ =/12 ' :" "2 '4 49/(/ : /1 : / :' =' 49+4 42 6<=4 &# +' 12 ' J 14 2 '' &2(* +(1/ '# 49/ & ' :/(' (<=4 9+J/ (/+=2 '+3* / ; /+' =' +4 49/ 4 ; / 2 49/ & ' : ')' 2 Ö ' 27 ') ' 792 49/ 27 ' / (='3<4 ' :2<34 79/49/('49+4 =' ( )94 ' <4 49/ " (/=/ '4 1+=/ =' 12 '1*<: / :' 3# +<P 492(4# 5 ' ' *+103<(' ' Ö ' ;)94 7 =9 49/ *+7 42 3/ +=' ; # (249/(+(4 '' :2/=' 3<4 9<(32('=' 1+=/ =' '' "2 ' 4 ' ' :' ' + ; ' '1* ' / :' 42 49 ' 0 7 / =92<*:' 9+J/ 42 +:9/(/ 42 4 & 4 7/(/ 42 3/ (/12 '= : /(/ : ' ' :' ' :2 '24 49 ' 0 49+4 ' 7 492<4 49/ P 4/(&/(/ '1/ 2 49/ /) =*+4<(/ ' 79/(/ 49/ 2( ) '+* 4+0 ')' =' ' '21/ '4 + :' 49/ 12 'P J/(= 2 '' 2 '*# < '*+7 &<*' 7/ 12<*:' 92*:' 492 1(; / 2 *+(1/ '# 42 3/ 12 ; "*/4/ : ' 9/ '' 7/ +(/ 32<' :' 42 +14 2 '' 9<(32('=' 1+=/ ' +' :' 9/(/ 4 =' 1*/+(49+4 49/(/ 7+=' '2 /J : / '1/ 49+4 49/ " (=2 ' /(' 9+ :' + '# ; /+' =' 2 & ' : ')' 49/ 27 ' /(' +4 49/ 4 ; / 2 " 10P ')' <'' 4*g =2J/(/) ' ' +' :' 49/ 6<(/ 7/(/ '24 +=0/ :' 49+4 T</=4 2 ' 9/(/&2(/ ' 49 ' 0 49/ 12 ' J 14 2 '' =92<*:' 3/ T<+=9/ : $ /' /) ' J V244 ' /+(=' ' M ' AEM '

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A?@C' F ' I@ @1' F=' F@' F=E' A ' ' ?' F@' FAD%=?E' A11@C@E' F J'=' C@G=CE' A1' i ' 1' F@' GA E' C@ AC@' ' F@' DC A?@C' A E' F J' F@' <?@G' ?A F ?>' A1' F@' ?A @' ;' F ' ?' F ' = @ J @? ' I@1AC@' F@' F=> ' != @%' F@' @]D = ?@E' F= ' F@' F=E' > B@?' >A E' 1AC' F@' ?A @' F@' =J@' E=' F=' F@' DCA @ AC' A ' %' I ' G=' =1C= E' A' @]D = ?' F ' A' F@' DCA @ AC%' @ ' F@' FA E' I@' AI >@E' A' > B@' D' F@' ?A @' A' F ?=' B E@? @' G=' > B@?' A' FAG' F=' F@' DC A?@C' F=E' > B@?' >A E' 1AC' =' i ' ?A @%' =IA ' F@' J @' A1' Fp' A ' I ' F@' DCA @ AC%' A' =' J =?' ?' F@' FAD' A1' F@' DC A?@C%=?E' F= ' F@' D H=A?AC%' A?' F@' =J@' E=' F@' DCA @ AC' ?b C@E' =1 @C' F@' ?A @%' D=C @E' G F' ' F@' Z C '1A ?E%' ' F=' F@' ?A @' G=' ECADD@E' I ' F@' DCA @ AC' ?' F@' FAD%=?E' F=' F@' DC A?@C'1A ?E' ' F@C@' -?E ' F=' F@' G A?@C' =' F@' J @' F@' D <@E' D' F@' ?A @' E E' ?A '<?AG%' ?AC' F=E' @' C@= A?=I @' J @=? ' A1' <?AG ?>%' GFA' F@LAG?@C' G= ' CE ' F= %' F@' =1 @CG=CE ' = b C@E' <?AG @E>@' A1' GFA' F@' AG?@C' G= %' =?E' =1 @C' F=' F@' A?B@C @E' F@' ?A @' A' F ' AG?' @' : F ' F=' F@' ?T @?E@E%' GF@?' F@' D <@E' D' F@' ?A @' ?' F@' FAD%' A' =<@' ' A' F ' G?' @%' =?E' E@DC B@' F@' AG?@C' A1' %' GFA@B@C' F@' AG?@C' J >F ' I@' A F ' F=' F@' DC A?@C' I@ @B@E%' = ' F@' J @' F@' D <@E' D' F@' ?A @%' F=' F@' AG?@C' A E' I@' 1A ?E' ?E' DA?' =' = @' C@ @CB@E%' ' G=' F@ E' F=' F@' DC A?@C' G=' > ' A1' =C @? ' F@' 1 ?E ?> ' A1' F@' Z C ' ICA >F ' F@' = @' @=C ' G F ?' F@' EA C ?@ ' = E' EAG?' ?' - 2' B ' F<) ": 4" 'G' 1!3' 1AC' ? @ ' F@' C J =? @ ' A1' F@' 1 ?ET ?>' =C@' F' F=' F@' 1 ?E@C' ' G=CC=? @E' ?4' I@ @B ?>' F=' F@' >AAE ' =C@' A %' AC' F=' F@' AG?@C' A E' ?A ' I@' 1A ?E%' ' ' =C @? ' @C@' F@' ?A @' G=' A ' ?' F@' @? @' F=' ' G=' ECADD@E' A ' A1' F@' AG?@CH' D C @' ;' I ' ' G=' ?A ' A ' ?' F@' @? @' F=' F@' AG?@C' E E' ?A ' <?AG' GF@C@' A' 1 ?E' ' ' AA?' =' F@' AG?@C' E AB@C@E' F ' A %' F@' G@? ' =' A? @' A' F@' FAD' =?E' ?b C@E' 1AC' ' @1AC@' =' J =?' =?' =DDCADC = @' =' F ?>' ??A @? %' F@' J ' I@ @B@' ' A' I@' A ' ?' F@' @? @' F=' F@' AG?@C' EA@ ' ?A ' <?AG' GF@C@' A' 1 ?E

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& F@C@' J @=? ' A1' 1 ?E ?>' AG?@C

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=' I C@= %' G I I' F=E' I@@?' E@ B@C@E' A' =' =CD@? @C' 1AC' F@' D CDA @'
A1' I@ ?>' C@D= C@E ' F@' DA ? ' =CA @' ?' F@' A C ' A1' F=? @C ' DA?'
F@' 1A AG ?>' 1= ' ??' =C GC >F ' E @E' DA @ @E' A1' F@' I C@= %'
?' =' @ C@ ' D=C ' A1' GF F' F@' F=E' A? @= @E' ? ?@' F ?EC@E' > ?@= '
! ' E ! ' 1 @C' F@C' E@= F%' (F=CE' =C GC >F %' F@C' D@C A?= ' C@T
DC@ @? = B@%' @? ' F@' I C@= ' A' F ' ICA F@C' @?C ' ;' GFA' AA<' '
A' F@' = ' ?E @ ' =?E' ICA >F ' ' I= <%' G FA ' F@' 1A? @? ' A1'
' I@ ?>' E AB@C@E ' 'G= ' F@?' A E' A' =' D@ A?' ?= J @E' # <' 1AC'
FC@@' > ?@= %' GFA' E@ B@C@E' ' A' A?@' C@@?%' =' =CD@? @C%' 1AC' F@'
D CDA @' A1' C@D= C ?>' ' C@@?' @ J D A @E' =' D@C A?' ?= J @E' '
>GAC F%' GFA' 1A ?E' A ' F@' J A?@ ' ?>GAC F' C@ @ B@E' A? '
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GFA @' J ' A1' ? ?@' F ?EC@E' > ?@= ' G= ' @ C@ @E' I ' C@@?%' F '
C@@?H ' G 1@%' =?E' I ' A?@' ' F=CD@%' =?E' ADB@C @E' A' F@ C' AG?'
@' ?' F@ @' >>@ A? %' =C GC >F %' F@' D@C A?= ' C@DC@ @? =T
B@' A1' F@' AC > ?= ' AG?@C' A1' F@' I C@= %' 1 @E' =' I ' A1' E AB@C '
=>= ? ' C@@?' =?E' F ' G 1@%' =?E' * C ' F=CD@' ;' ?' GF F' I ' # <'
ZA ?@E%' I ' E E' ?A ' = J ' =? ' A1' F@' J A?@ ' A?' F ' AG?' = A ? ;'
=?E' F@' E@1@?E=? ' E@ J CC@E' A' F@' I ' A?' F@' >CA ?E' F= ' =?'
=? G@C' A' F@' E AB@C ' A >F ' J >F ' IZ@ ' F@ J ' A' C J ?=' '
D ? FJ@? ;' 1 @C' F@' =C> J@? ' DA?' F ' E@ J CC@C%' F@' ACE'
F=? @ AC' = E%' F= ' F@' C@= ' b @ A?' G= %' GF@ F@C' F@' I '
F=C>@E' =' 1@ A? %' =?E' F= ' F@' E ? A? ' DA?' F= ' DA ? ' G@C@' A'
@] C@ J @ '? @%' F= ' F@' FA E' ?A ' C ' F J @ 1' A' = ' =? F ?>'
DA?' F@ J ' ? ' F@' F=E' @@?' = ' F@' = @ %' =?E' A? @E' AJ@' A1'
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AD ? A?%' =?E' = E%' 7 ' F=B@' AA<@E' ? A' F@' IAA< %' =?E' F=B@' = <@E'
G F' A J @' A1' F@' Z E>@ ' =?E' A F@C ;' =?E' ' F=B@' ?A ' 1A ?E' ?' =? '
A?@' D@C A?' =' EA I ' F= ' F ' ' =' 1@ A? ' A' A? @' 1@ A? %'
F@C@' C %' A1' ?@ @ %' I@' =' 1@ A? A ' =< ?> ' C@= F' A1' C '
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F= ' F ' I C@= ' I@ ?>' E@ B@C@E' A' C@@?%' 1AC' ?A' A F@C' D CDA @'
F=?' A' C@D= C%' 1' F@' ICA<@' AD@?' =? ' D=C ' GF F' ' G=' ?A ' ?@ @ T
=C ' A' A F' 1AC' F@' D CDA @' A1' C@D= C%' G F' =?' ? @? A?' A' =<@'
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DA <@ IAA<' A? = ? ?>' I=?<' ?A @ ' G@C@' A1 ' ?' F@' DA <@ ' A1' =
A= ' @? ' A' I@' J @?E@E%' =?E' F@' = AC' AA<' F@' DA <@ IAA<' A ' A1'
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F@' E= %' =?E' F@' A= F J =?' E E' ?A ' <?AG' A' GF F' A1' F@ J ' '
I@ A?>@E%' F@' = b C@ ' ' I ' 1 ?E ?>' ' @C = ? ;' I ' ?A ' I@ ?>'
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= ACE ?>' A' F@' J AE@ J ' = @ ' F@C@' ' =' B= ' ? J I@C' A1' A F@C'
= @ ' FA @' G F' GFA J ' ' F=B@' A?B@C @E' DA?' F ' DA ? %' GFA'
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9/(' ; 2 ' /# & F@C@' =' D@C A?' D C F= @E' = ' =' D I ' = A?' =' I C@= %' ?' GF F'
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JA?@ %' GF ' F@' =DDCADC = @E' A' F ' AG?' @%' =?E' = ' F@' J @' A1' A' =' I C@= %
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F@' F=E' ?A' C@= A?' A' I@ @B@' F= ' =? F ?>' JAC@' F=?' F@' I C@=
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G F' =' DA @' A11 @C' A' F@' D = ? 11H ' FA @%' AA<' F J' ? A' AE %'
=?E' A?B@ @E' F J' I@1AC@' =' J => C= @' A?' =' F= >@' A1'1@ A? %' GF@?'
F@' G= ' E F=C>@E%' F@' J => C= @' EA I ?>' GF@ F@C' =!' F=C>@' @1'
1@ A? ' A E' I@' DDAC @E ' ' G ?@ ' = @E' F= ' =1 @C' F@' I C@= '
G= ' A E%' AJ@' A?@' A1' F@' I =?E@C ' AI @CB@E' F= ' F@' D = ? 11'
J >F ' F=B@' IA >F ' AJ @ F ?>' JAC@' F=?' F@' I C@= %' = ' A?@' A1' F@'
EC=G@C ' GA E' ?A ' AD@?%' DA?' GF F' F@' = A?@@C' = E%' 7 A' J F'
F@' I@ @C'1AC' F@' I @C';' ' F=B@' A E' ' G F' ' A? @? H F@'
= A?@@C%' FAG@B@C%' = @E' F= ' F@C@' G= ' A?@' EC=G@C' GF F' GA E'
?A ' AD@?%' =?E' F= ' GF= ' F@' = E' G= %' !' F= ' ' A1'?A' A? @b @? @';' '
F=B@' A E' F@' @ C@ =C %' I ' ?A ' ' A? @? H ' E E' ?A ' =DD@=C'
F= ' =? ' D@C A?' <?@G' F= ' F@' I C@=] ' A? = ?@E' =? F ?>'GF= T
@B@C' ?E= %' ' %' A E' F@'Z C ' F= %' = ' F@' DCAD@C ' F=E' I@@?'
E@ B@C@E' A' F@' D = ? 11%' = ' F@' D C F= @C%' F@' FA >F ' F@C@' F=E'
I@@?' ?A' 1@ A? A ' =< ?>%' =?E' @1 ' A' F@ J' F@' b @ A?' A1' E= J =>@ '
A? %' C@ @CB ?>' @=B@' 1AC' F@' E@1@?E=? ' A' JAB@' A' @? @C' =' ?A? ;'
=?E' =1 @C' =C> J @? %' =?E' J @' =<@?' A' A? E@C%' F@' 1A AG ?>'
J ?A ' Z E> J @? ' G= ' E@ B@C@E' I ' 5=C<@%' '$!& @' F=B@' AJ@'
A' Fu' A? A?' F= %' 1' F@' E@1@?E=? H = @' G= ' C @%' F@C@' G= '
11 @? ' @B E@? @' A1' =' =C @? ' I ' F@' D = ? 11';' I ' G@' =??A

E C@ ' =' ?A? %' I@ = @' =' 1= ' G= ' E@DA @E' A' A?' F@' D=C ' A1' F@' D = ? 11%' G F F' >F ' A' F=B@' I@@?' @1 ' A' F@' Z C %' =?E' GF F%' 1' I@ @B@E' I ' F@ J %' GA E' F=B@' > B@?' =' A A C=I @' C >F ' A' F J ' A' F@' A? @? ' A1' F@' @ C@ =C %' = ' G@ ' = ' A' F@' @ C@T =C ' @ 1%' B K %' F@' E@ =C= A?' A1' F@' = A?@@C%' F= ' F@' AE = ' F= ' F@' D @ @' A1' 1 C? C@' A? = ?@E%' G F' F@' =C @' @ 1;' =?E' F@?' F@' =I C= A?' A1' F@' A? @? ' A E' ?A ' F=B@' I@@?' 1@ A? A ' F@C@' J %' F@C@1AC@%' I@' =' ?@G' C = ' ' 1' G@ = J @%' = ' F@' E@1@?E=? H@= @' G= %' F= ' F@' D bZ? 11' F=E' @]DC@ ' ?A @' F= ' F@' G= ' ?A ' A' F=B@' =? ' @ A' F@' A? @? ' A1' F@' @ C@ =C %' 1' F@C@' F=DD@?@E' A' I@' =? F ?>Z?' ;' =?E%' ?E@@E%' G FA ' F' @]DC@ ' ?A @%' 1' F@' F=E' ?A' >CA ?E' A' I@ @B@' F=' F@' F=E' IA >F ' F@' A? @? %' G@' =C@' = ' A1' AD ? A?' F= ' F@C@' G=' @B E@? @' A' J =<@' A ' =' = @' A1' =C @? ' ' ZB= ' A? @?E@E%' F=' F@C@' G= ' =' E@ B@C ' A1' F@' @ C@ =C %' =?E' F@' J A?@ ' ?' %' A' F@' D = ? 11' = ' F ' AG?' DCAD@C %' GF F' >=B@' F J ' =' =G1 ' DA @ A?%' =?E' F= ' F ' I @b @? ' J =DDCADC = A?' E E' ?A ' A? @' =' 1@ A? ' ' ' @@J ' A' ' F= %' FA >F' F@C@' G= ' =' E@ B@C ' A1' F@' @ C@ =C %' =?E' =' =G1 ' DCAD@C ' ?' ' F@C@I ' B@ @E' ?' F@' D = ? 11%' F@C@' G= ' ?A' E@ B@C ' A' = ' A' > B@' =' =G1 ' DA @ A?' A1' F@' D C @' =?E' JA?@ ' F@' B@?EAC' F=E' ?A' ? @? A?' A' E@ B@C' %' ?AC' F@' B@?E@@' A' C@ @ B@' ;' IA F' GJC@' >?AC=? ' A1' ' @] @? @$ =?E' GF@?' F@' D = ? 11' E AB@C@E' F= ' F@C@' G= ' =' @ C@ ' EC=G@C' A? = ? ?>' F@' D C @' =?E' JA?@ %' ' G= ' =' J D @' = @' A1' 1 ?E ?>%' =?E' F@' =G' =DD =I @' A' = ' = @ ' A1' 1 ?E ?>%' =DD @ ' A' F ' F@' % A E' C @' F= %' [' 1' A?@' A @' F ' >AAE %' ' ?E' =?A F@C' 1 ?E' F@J%' FA >F' F@' A?B@C ' F@ J ' 6 !& 4' *>"6 #!' A' F ' AG?' @%' ' ' ?A' =C @? %n' 7 3' F= ' ?E@C>A?@' ?' J AC@' C@ @? ' J @ ' A J@' J = A? ;' A?@' %' F= ' 1' F@' 1 ?E@C' <?AG ' GFA' F@' AG?@C' A1' F@' A ' F= @' %' AC' 1%' 1CA J' =? ' J =C<' DA?' %' AC' F@' C J =? @ ' ?E@C' GF F' ' ' 1A ?E%' F@' AG?@C' A E' I@' C@= A?=I ' = @C = ?@E%' F@?' F@' 1C= E @? ' A?B@C A?%' 6 !& 4' *>"6 #!' A? @ ' =' =C @? %' 7>3' ?E@C' F ' F@=E' 1= ' F@' = @ ' GF@C@' F@' 1 ?E@C' A1' =' DA <@ IAA<' G F' I=?<' ?A @ ' ?' %' G F' =' ?= J @' A?' F@ J %' A?B@C ' F@ J ' 6 !&4' *>"6 #!' G' AC' =' F= <?@ ' A= F J =?%' GFA' =I C= ' F@' A? @? ' A1' =' D=C @ ' GF F' F= ' I@@?' @1 ' ?' F ' A= F' I ' =' D= @?>@C%' GFAJ' F@' A E' @= ' = @C = ?' ;' AC' =' = AC' GFA' 1 ?E ' =?E' =DD @ ' A' F ' AG?' @' =' DA <@ IAA<%' ?' =' A= ' @? ' A' F J' A' C@D= C' I ' =' T A J @C' GFA J ' F@' J ' <?AG' $ = ' F@ @' F=B@' I@@?' F@ E' A' I@' = @ ' A1' =C @? %' =?E' F@' DC@ @? ' ' =?' ? =? @' A1' F@' =J @' < ?E%' =?E' ?A ' E ?> F=I @' 1CA J' F@ J ' ' ' = E' F= ' F@' A11@? @' =??A ' I@' =C @? ' ? @ ' F@' =< ?>' GA E' I@' =' C@ D= %' =?E' F= ' ' C @;' I %' 1' F@' 1 ?E@C' 1CA J' F@' C J =? @ ' A1' F@' = @' J ' F=B@' <?AG?' GFA' G= ' F@' AG?@C!%' =?E%' ? @=E' A1' <@@D ?>' F@' F= @ ' 1AC' F J %' J @=? ' 1CA J' F@' 1 C ' A' =DDCADC = @' ' A' F ' AG?' @%' F@' EA@ ' ?A ' = b C@' ' I ' =' C >F 1 ' @%' =?E' F@' C @' AG?@C' J >F ' J = ? = ?' C@ D= ';' =?E' ' @@ J ' = A' 1CA J' ' (' 4& ' NCd

W Ð' H' '=4' .ME
) * J ;' "' .EH
%&8 J ;' "' .EY' 9 =' "2= 4 2 '' =' +4' J+(+ ' 1/' 7 49' *3<(' /=' 1+=/' :' /7 ' GA.' + ' :' 7 49' G' +=4' ' ' R"' YYA' + ' :' :2/=' 6 4' =// ;' &+ (*#' : / : <1 3*/' &(2 ;' #' ' /=' 1+=/' +=' 49/(/' 49/' "(=2 ' /(_ ; <=4' 9+J/' 0 ' 27 '' 49/' 32V' 7+=' '' <4' '' 49/' 12+19' ? + ' :' +=' 9/' += =4/ :' '' : 3' 2<4 49/' *<))+) / ' '*/+J ')' 49/' 32V 3/9 ' :' 7+=' /J : / ' 1/' 2&'+'' '4/ ' 4 2 ''+4' 49+4' 4 ; /' 42' 12 ' J/ (4' 4' 42' 9 =' 27 '' <=/' 9/(/' 7+=' 2' & ' 2&' 9 =' '4/ ' : ')' 42' (/=42(/' 4' 9<4' +' =4+4/ ; / ' 4' +&4/(' 9/' 7+=' '' 1<=42 : # 49+4' 9/' 9+:' 3// '' 49/' =+ ; /' : +# 42' 49/' '' (2=/1<42(' =' &2(' 49+4' ''<(''2=/' 2&' 49/' 46 <49' 2&' 79 19' '249 ')' =' =4+4/ :' '' 49/' (/ ''2(4' >

J @' ? ' @' FA E' C@ C?' 1bC' %' F@' DC A?@C' AA<' ' G F' =? ? @? A?' A1' C@ C? ?>' ' =I A @ %' =?E' = ' = ' @B@? ' =< ?>' F@ F=? @' A1' =? ' C@G=CE' I@ ?>' > B@?' F J ' 1AC' F@' DC@ @?E@E' @CB @V B@?' ?' F ' = @' ' =J ' A1' AD ? A?' F= ' F@' GA E' I@' > ' A1' =C @? ;' I ' ' GA E' C@ @CB@' F= ' b @ A? H 7 '3

DA?' =?' ?E J @? ' 1AC' @= ?>' =' G= F%' F@' @B E@? @' @@J@E' A' DCAB@' F= ' F@' DC A?@C' F=E' 1A ?E' F@' G= F%' =?E' I @b @? ' =DDCADC = @E' ' A' F ' AG?' @' ' 3B=' F@C@1AC@' A? @?E@E%' A? F@' D=C ' A1' F@' DCA @ A?%' F= ' 1'= 'X F@' J @' F@' DC A?@C' 1A ?E' F@' G= F%' I@' AA<' DA @ A?' A1' ' G F' =' B @G' A1' @= ?>' %' AC' 1' F@' 1A ?E' F@' G= F%' =?E' ? @?E@E' A' E@ = ?' ' ? ' =' C@G=CE' G=' D= E' 1AC' F@' =J @%' F@' G= ' > ' A1' =C @? ' F@' Z C ' E@ B@C@E' F@' 1A AG ?>' GC @?' B@CE %' F@' GACE ' ?' = ' F=B ?>' I@@? I @b @? ' =EE@E' I ' F@' Z C ' =1 @C' @]D =?= D?' I ' F@' A C' 7 " A ' > ' A1' @= ?>' F@' G= F%' I ' > ' A1' <@@D ?>' DA @ A? A1' ' ?' F@' FAD@' A1' C@G=CE%CA J ' < ' !& ' < '*!" ' <6#' < ' 56 <' =?E%' DA?' =' = @' C@ @CB@E%' ' G = ' F@ E' F= ' =< ?>' F@' 1 ?E ?>' ' A?Z ? A?' G F' F@' 1= '' F@' DC A?@C' A E' ?A ' I@' E@@J@E' A' F=B@' A J J @E' F@' A11@? @' A1' =C @? ' F@' Z C ' F=E' 1A ?E' F@' DC A?@C' 7?A ' > ' A1' @= ?>%H =?E' F@C@' G= ' ?A' 1 ?E ?>' F= ' F@' DC A?@C' 1@ A? A ' AA<' F@' G = F;' F@ ' F=E%' F@C@1AC@%' = b @E' F J ' 183

?' =?' ?E J @? ' 1AC' @= ?>' =' I =?<@CH ' F@b @' 1AC' 9- ' V' = E' ?' A?@' A ? ' = ' F@' DCAD@C ' A1' ' A E J F%' =?E' ?' =?A F@C' = ' F= ' A1' ' A F@C;' ' =DD@=C@E' F= ' A F@C%' =' =E' A1' 1A C@@?%' 1A ?E' F@' F@b @%' =?E' F@G@E' ' A' F@'N'DC A?@C%' GFA' A E' F J' F= ' ' G= ' A? ' =?' A E' F@b @' A1' F@' (A = ' C F' =?<%' =?E' F= ' F@' G F@E' A' F@G' ' A' =' 1C @?E%' =?E' A' <@D ' F@' F@b @' A F@C' A E' ?A ' C@=E' ;' F@' G@? ' A' F@' DC A?@CH ' FAD' F@' =J@' E= %' =?E' = <@E' 1AC' F@' F@b @;' F@' DC A?@C' 1CA J ' J @' A' J@' J =E@' B=C A ' @] @ ' 1AC' ?A ' > B ?>' D' F@' F@b @' $ =?E' A F@C' ?@B@C' =G' ' =>= ? ' F@' DC A?@C' =G' A E J F%' =?E' = E' F@' <?@G' F@' F@b @' G= ' A E J FH%' = <@E' G F= ' C@G=CE' G= ' A11@C@E%' =?E' A?' I@ ?>' A E' 1 B@' F ?> %' = E' F@' GA E' C= F@C' >F ' F ' D D@' G F' ' F=?' =<@' 1 B@' F ?> ' F@' F@b @' F=E' ?@B@C' I@@?' C@ @ B@E' @ F@C' I ' A E J F' AC' A F@C ' F@' Z C 1A ?E' F=' 7 F@' DC A?@C' AA<' F@' F@b @' 1CA J ' A F@C' ?' F@' FAD@ ' A1'>@ ?>' F@' C@G=CE;' =?E%' 1' F= ' ' =C @? %' G@' 1 ?E' F J ' > ';!' =?E%' DA?' =' = @' C@ @CB@E%' ' G= ' F@ E' F= ' F@ @' 1= ' E E' ?A ' F@G' =? ' 1@ A? A ' =< ?> ' F@' J @C@' G FFA E ?>' A1' F@' F@b @' ?E@C' F@' C J =? @ ' E E' ?A ' = J A ? ' A' F' =' =< ?>' = ' ' C@b C@E' A' A? @' F@' A11@? @' A1' =C @? %' 163

?' =?' ?E J @? ' 1AC' =C @? %' ' =DD@=C@E' F= ' A J @' J I@C' F=E' I@@?' @B@C@E' 1CA J ' =' C=1 ' A?' F@' F >F' @= ' =?E' C=?E@E;' ' IAC@' F@' AG?@CH ' J =C< ' F@' DC A?@C' C@ J AB@E' F@' J I@C' 1CA J ' F@' FAC@' A' F ' AG?' FA @%' =?E' @11= @E' F@' J =C< ' ?' F@' 1A AG ?>' E= ' F@' >=B@' ZA @' A1!' F@' DA @ A?' A1' F@' J I@C' A' F@' =>@ ' A1' F@' (@ @ B@C' @F@C= ' A1' E J C= ' ECA ' C@ G@ %' %' A E' F@' Z C %' 7 F@C@' =C@' GA' b @ A? ' 1AC' A C' A? E@C= A? ' # E

" 7B /) ' , ' "<()/2' ' G' 2V' ' ' .MG' 1*/+(*#' 7+=' ' 2' *2=='+4' +** /1/ ; 2/(' .EIY' 9/' 6<(#' &2<' :' 49+4' W]B ' /) ' (' 2(0' ' /' ' ' ' ' HHA' 49/' ' (=2' /(' 4220' ' 2(: /(' 42' /V+14' +' -' 9 : ' # ' 9 : 9 ' /7+(: ' +' :' 72<*: ' 24' 9+J/' (/4<(' /: '49/' " B /) ' ' ! +(: ' /(' ' ' ' ' ' ' 3+)' 7 492<4' +' (/7+(: ' '' 49 =' 1+=/' 49/(/ GIH' # ' .EYG

F@' DC A?@C' =<@' F ' J I@C' 1@ A? A ' 1AC' F@' D CDA @' A1' A?T B@C ?>' ' A' F ' AG?' @%' AC' E E' F@' =<@' ' G F' ? @? %' I ' E@1= ?>' F@' J =C< ' A' F= ' ' J >F ' ?A ' I@' E@? 1 @E%' F= ' ' J >F ' I@ AJ@' =' ECA ' A1' F@' EJ C= %' GF F' GA E' @? @' F J ' A' F@' = B=>@' V FA E' A ' I@' A1' AD ? A?' F= ' F@' = @C' G= ' F ' ? @? %' =' E@ = @' b @ A?' G ' =C @' GF@ F@C' F= ' GA E' I@' 11 @?' ' A' A? @' =' 1@ A? ` =' DA ? ' A1' G11 bF' ' F=B@' A? E@C=I @' EA I %' =?E' GF F' ' F= ' C@ uCB@ H1:3' 9

DA?' =?' ?E J @?' 1AC' @= ?>' =' =J I %' ' =DD@=C@E' F= ' F@' DCA @ AC' F=E' @?' GF @ 1= @E' =J I ' ?' =' 1 @ E%' =?E' F= ' F@' DC A?@C' G= ' = AG@E' A' D ' G@? ? ?@' I = < 1= @E' =J I ' ? A' F@' 1 @ E' 1AC' =' ? >F H' <@@D%' 1AC' A?@' D@?? ' = F@=E ' F@' ?@] ' E= ' F@' DC A?@C ' G@?' A' A?@' = B@C ' =?E' = <@E' F J ' A' ' I ' G@? ' ? ?@' =J I %' GF ZZ' F@%=>C@@E' A' EA;' = B@C ' A ? @E' F@' =J I %' =?E' ?1ACJ @E' F@' DC A?@C' F= ' F@C@' &@C@' F C ' ? @=E' A1' G@? ' ? ?@%' =?E' DA ? @E' A ' A' F J ' =' GF @ 1= 1@E' =J I %' DA?' GF F' F@' ' = E%' 7 1' A ' AIZ@ ' A' =<@' F C ' ' G ' EC=G' A?@' ;H = B@C %' FAGT @B@C%' I A >F ' =?E' D= E' 1AC' F@' GFA @ ' F@' GF @ 1= @E' =J I ' G= ' ' DCAB@E' A' I@' A?@' A1' F@' @?' I @ A?> ?>%' A' F@' DCA @ AC%' =?E' ' =DD@=C@E' F= ' F@' DC A?@C' J ' F=B@' =<@?' F@' =J I ' 1CA J' F@' 1 @ E' @=C ' ?' F@' !J AC? ?>%' GF F' G= ' F <' =?E' C= ? ' 1 @' F= CJ =?' A E' F@' Z C ' F= %' FA >F' F@' DC A?@C' E E' ?A ' <?AG' F= ' F@' =J I ' G= ' ?' F ' 1 A <' ' H&= ' DA ? @E' A ' A' F J %' F@' FA E' C @' F= ' ?' DA ? ' A1' =G' F@' =< ?>' A CC@E' GF@?' ' G= ' DA ? @E' A ' A' F@' DC A?@C' =?E' A E' I ' F J';' =?E' F@' Z C ' F=B ?>' 1A ?E' F= ' = ' F@' J @' A1' @ J ?>' F@' 1 @ E' F@' DC A?@C' E E' ?A ' <?AG' F= ' F@' =J I ' G= ' ?' F ' 1 A <%' =?E' F= ' F@' G= ' > ' A1' 1@ A? ' = ' F@' J @' ' G= ' DA ? @E' A ' A J %' ' G= ' F@ E%' DA?' =' = @' C@ @CB@E%' F= ' F@' DC A?@C' AJ J @E' =' C@ D= ' GF@?' F@' ECAB@' F@' =J I ' A ' A1' F@' 1 @ E%' FA >F' F= ' G= ' ?A ' =' 1@ A? A ' C@ D= %' =?E' F= ' F@' DC A?@C%' I @ ?>' AC > ?= ' =' C@ D= @C%' A? ? @E' =' C@ D= @C' = ' = A?>%' =?E' F@' J AJ @? ' F@' A E' F@' =J I ' G F' =' 1@ A? A ' ? @? ' F@' I@ =J @' =' F @1' N d

' ' u' J d' : 3' ' ' (J*')' +' *+ ; 3' 2 ;' +' & /*:' 3# ; =P 4+0/ ' +' : ' +&4/(7+(:=' '

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F@' =< ?>' =?E' =CC ?>' =G= ' J ' I@' 1@ A? A %' F= ' %' EA?@' 6 !&4' *>"6 #! 9/' 4+0 ') ; <=4 3/' &/*2 ' 2<= &' 49/' '

?@' A1' F@' J A ' J = @C = ' A? E@C= A? ' C@ D@ ?>' F@' =< ?>' =?E' =CC ?>' =G= ' A1' >AAE ' ?@ @ =C ' A' A? @' =C @? ' % GF@ F@C% F@' 1= ' G@C@' EA?@' 6 !&4' *>"6&#! ` 7 J' =? J A' E A% b =' ?@' =? J A' 1 C=?E ' ?A?' AJ J C H NEd' F@' ACE ?=C ' E T AB@C ' A1' F' 1@ A? A ' ? @? ' ' GF@C@' F@' D=C ' AJ J ' F@' 1= ' =?E@ ?@ %' AC%' DA?' ' I @ ?>' = E' A' F ' F=C>@%' E@? @ ' $ I ' F ' ' I ' ?A' J @=? ' F@' A? ' C @C A?' A1' C J ?= ; 1AC' ?' = @ ' F= ' J = ' = J A ? ' A' =C @? %' F@' B=C @ ' A1' C J =? @ ' ' A' >C@= %' =?E' F@' AJ D = A?' F@C@A1' A' J ?> @E%' F= ' ' ' J

" B /) ' ' +44=' ' 2V' ' M' HIN' <=/ # ' .EII ' 9/' 6<(#' &2<' .:' 49/' " (=2' /(' W1b' /) ' ' */#' /+(=' ' ' .IN)< *4#' 2&' &/*2 ' 2<=*#4+O ')' 4' &2(' 9 =' 27 ' " B J .' " ' .GH

2' G

DA I @' A'C@ A ?'= ' FA @' GF J= '@B E@? @'='1@ A? A ' ? @? %'
AC'6 !& > & '*>"6 #!' ' ' @1 ' A' C@1@C' A' FA @' DA ? 'GF F'
F=B@'= C@=E ' AJ@' ?E@C' A? E@C= A?'$ I ' ?@G' = @ ' G ' A?T
? = ' A C%' ?' GF F' F@' 1@ A? A ' ? @? ' J ' I@' @1 %' DA?'
F@' D=C =C' C J =? @ %' A' F@' E @'=?E'= @? B@' A? E@C= A?'
A1' F@' A C'=?E'Z C %'GFA'G ' ?A ' 1AC>@ ' F@'@] @ @? ' C @%' F=
?' EA I 1 ' = @ ' ' ' DCAD@C' C= F@C' A' ? ?@' A'= b = ' F=?'
A?B A?%'N@d 7

+=/=' 79/(/' 49/'4+0 ')' ='
2'*# +

' ' @=C' F=' F@' =< ?>%' FA >F'GCA?>1 %' J='A? '=JA ?'
C=' C@ D= ' F %' 1'=' J=?' =<@ ' =G=' F@'>AAE ' A1' =?A F@C'
AD@? ' I@1AC@' F J' AC' A F@C' D@C A? %' A F@CG @' F=?' I ' =DD=C@? '
CAII@C %' F ' =CC @ 'G F' '=?'@B E@? @'A? 'A1'=' C@ D= %' I@ = @'
EA?@' AD@? ' ?' F@'DC@ @? @'A1' F@'AG?@C'AC'A1' A F@C'D@C A? 'GFA'
=C@'<?AG?' A' Fu'AG?@C'N Md' ?E' F@'@B E@? @'A1' 'I@ ?>'A? ' ='
C@ D= 'G 'I@' CA?>%'GF@C@'=' D@C A?%' F=B ?>'DA @ @E'F J @ 1'A1'
F@' >AAE ' A1' =?A F@C%' =BAG ' F@' 1= ' I@1AC@' F@' 'b @ A?@E%'N11d
>= ?%' 1' =' J=?' @=B@ '=' F=CCAG'AC'D A >F' ?' ='1 @ E%' =?E'=?A F@C'
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F=B ?>'EA?@'G F' F@J%' @ F@C'C@ C? ' F@J' A' F@'D = @'GF@C@' F@ '
G@C@%' AC'= b = ? ' F@'AG?@C'G F'I 'F=B ?>' =<@?' F@J%' F ' '?A'
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I@' EC=G?' GF@C@' =' J=?%' F=B ?>' = @' DA?'!=%' AJJA?' GF F' I@'
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C ?>'A?' F@' AJJA?%'C E@ '=IA ' DA?' ' A' 1?E' F ' = @%'=?E'
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F@' = @'G ' ?A 'I@' A' @=C'GF@C@' F@' DCAD@C ' ' =<@?'G FA '
F@'DC B 'AC' @=B@' A1' F@' AG?@C%'=?E'?A' ? @? A?' A'C@ C?' ' '
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'=DD@=C@E' F=' F@ 'G@?' A' F@' =I @ ' A1' F@' DCA @ AC'= ' ='
D = @' = @E'5@ ' C=? @%' ?' F@' ? >F ' J@%'=?E' AA<' A ' F@'
J=C@'=?E' F@'>@ E ?>%'=?E'CAE@'A?' F@J' A' @ FE= @%'=' D = @'=IA '
F C ' J @ 'A11%'GF@C@' F@ ' AA<' F@J' A' E 11@C@?' ??! %'=?E' @1'
F@J' ?' F@' =C@'A1' F@' A @C %'E C@ ?>' F@'A @C' A' @=?'=?E'
1@@E' F@J%'=?E' = ?>' F=' F@ ' FA E'C@ C?' ?' FC@@'FA C';' =?E'
?' F@' A H@'A1' F@' =J@'E=' F@'DC A?@C 'G@C@' =<@?'=''='E =? @'
A1'1A C @@?' J @ '1CAJ' @ FE= @%'G=<?>' AG=CE ' =CC ?>EA?%' ?'
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E C@ @E' A' A? E@C' GF@ F@C' F@' D ! A?@C %' GF@?' F@ ' AA<' F@'
J=C@'=?E'>@ E ?>%' ? @?E@E' A' J=<@'=? ' 1 C F@C' @'A1' F@J' F=?'
A'C E@' F@J' 1AC' F@'D CDA @'A1'= ?>' F@J' A?' F@ C'ZA C?@ '
AG=CE ' F@' D = @'GF@C@' F@ 'G@C@'>A ?>%'=?E' F@?' A' @=B@' F@J'
A'I@' C@ AB@C@E'I ' F@'AG?@C'AC'?A '=' ' J >F ' C?'A %'1A ?E' F@'
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F@'DC A?@C ' J @=? ' J @C@ ' A'C E@' F@'FAC @ ' A' @ FE= @%'=?E' A'
@=B@' F@J' F@C@';' =?E' F=E' ?A' ? @? A?' A'C@ C?'1AC' F@J%'AC' A'
J=<@'=? '1 C F@C' @'A1' F@J ' '=' A?1@C@? @'A1' F@'Z E>@ ' F '
1?E ?>' G=' A? E@C@E';' GF@?' A?@' A1' F@J'N d' FA >F ' F=' F@'
= @'=JA ? @E' A'1@ A? ' I@ = @' F@C@'G=' ?A' ? @? A?' A'C@ C?'
F@' FAC @ ' A' F@' AG?@C%' I %'1AC' = >F !' F@' DC A?@C ' A? @C?@E'
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W/b' .' +*/' AMN' I' *+1' 2 ;' GHG' ' ;' +*/' AYN I' *+1' 2 ;' GHG
Wwb' .' +*/' AMN' W b' .' +*/' AMN
Wcd5 G' +=4' ' M' 1' .Y' =' NE' "' YY.' W b' !(2=/' ?

C@C ' C I @C ' N>@?@C= ' ?' AJD=? @ ' A1'1A Cd' =<@' 1CAJ' F@' =EB@? C@C ' =' @C = ?' ? J I@C' A1' =CE ' ?' F@' J ?@% = @E' =' D F%'1CAJ' GF F' F@ ' E >' A ' AC@%'=?E' FCAG' ' ? A' =' F@=D' AC' D @' ?' AJ@' @B@ %' GF@? @' F@ ' A?B@ ' '= A?>' F@' @B@ ' A'=' F=1 %' =?E' A%' D' A' F@' C1= @%' GF@C@' ' ' =<@?' I ' F@' =EB@? C@C %'=?E' F@' C I @C ' EA' ?A ' ? @C1@C@' 1 C F@C ' F@' C I @C ' =C@' D= E' = ACE ?>' A' F@ C'=>C@@ J @? %' A' J F'N?' F@' DA ?E'A?' F@' @ ?>' DC @' A1' F@' AC@'$ GF@C@' ' 'B@C '>AAE' F@ 'C@ @ B@'=' J = @C' J' F=?' &F@C@' ' ' ?1@C AC%' I@ = @' F@' =J@' b =F ' A1' =IA C' NGF F' ' GF=' F@ ' A? C I @d' DCAE @ ' =' JAC@'B= =I @' AJT JAE ' ?' F@' A?@' = @' F=?' ?' F@' A F@C ' F@' DCA @ AC H D F' A? = ?@E' I@ @C' AC@' F=?' F@' DC A?@C H F@'DCA @ AC ' C@ @ B@E' - ' : _' ?' F@'DA ?E'1CAJ' F@' =EB@? C@C %' F@' DC A?@C %' 8 ' E' F@'DC A?@C ' F=E' =<@?'=' =C>@' bE=? ' A1' AC@'1CAJ' F@' DCA @ AC H D @%'=?E'=EE@E' ' A' F@ C'AG?' ! ' G=' AIZ@I @E' F=' I ' =< ?>' AC@' A ' A1' A?@' D @%'=?E' D ?>' ' ?'=?A F@C%' F@' DC T A?@C ' E E'?A ' @=' 1CAJ' F@'=EB@? C@C %'1AC' IA F'D @ ' C@J= ?@E' ?' F@' DA @ A?' A1' F@' =EB@? C@C %' 1' F@' C I @C ' G@C@' I ' @CB=? ;' =?E' 1' F@' C I @C ' G@C@' @?=? ' ?' AJJA?%' %'= ' IA F'D @ 'G@C@' ? @?E@E' A' AJ@%'=?E' J=@ 'GA E' AJ@' ? A' F@' F=?E ' A1' F@' =EB@? C@C %' F@C@' A E' I@' ?A' @= ?>' 1CAJ' F@J ' AC' F@'DCA @ AC ' 'G=' =? G@C@E' F=' F@' =EB@? C@C ' G@C@' F@= @E%'1AC' F@ 'GA E'F=B@' A'D= ' ' _' ?' F@' DA ?E' 4 ' F@'AC@'C@JAB@E' A' F@'DC A?@C HD @%'GF@C@= %' 1' 'F=E'C@J= ?@E' ?' F@'DCA @ AC H D @%' F@ 'GA E'D= 'A? '- ' #' ?' F@'DA ?E';' =?E'I@ E@ %' F=' F@' ?= FAC K@E'C@JAB=' A1' F@' AC@' 1CAJ%' F@' DCA @ AC H D @%' G F'='1C= E @?' ? @? A?' A'=DDCADC = @' ' A' F@ C' AG?'I@?@1 %' G=' ='=C @?' F@' JAJ@?' ' G=' C@JAB@E%' GF F' A E'?A' I@' C@E' I ' C@ C? ?>' ' ?'=?' G=' A' F@' =EB@? C@C ;' =?E' F@' @=C?@E' Z E>@'NE3' GFA' C @E' F@' = @%' FA >F ' =' =C @?' G=' DCAB@E;' I ' DA?' =' = @' C@ @CB@E%' F@' Z E>@ 'F@ E' F@' A?B A?'GCA?>%'N>d

?' A? @b @? @' A1' F@'DC@ @E ?>' E@ A?' F@'-' ,' '3 @ ' ' 9% ' %'G='D= @E';' I ' F=' = @' 'C@D@= @E%'=?E' I ' F@'-:' ,'-8' 3 @ ' ' %' ' %'7&FA A@B@C%'I@ ?>' @JD A @E' ?' AC' =IA ' =? ' J ?@%' F= ' =<@%'C@JAB@%'AC' A? @=' =? 'AC@' A1' =? ' J@ = %'AC'=? U =D ' = =J ?=C %' J=?>=?@ @%' J ?E <%'AC'A F@C' J ?@C='1A ?E'A1' I@ ?>' ?' F'J ?@%'G F' ? @?' A'E@1C= E'=? 'DCADC @ AC'A1'AC'=? ' =EB@? C@C' ?' F'J ?@%' AC' =? 'GAC<J=?' AC' J ?@C' @JD A @E' F@C@ ?%' F= ' I@' > ' A1'1@ A? %'=?E' I@ ?>' A?B @E' F@C@A1%' F= 'I@' =I @%'=' F@'E C@ A?'A1' F@' A C%' A!I@' JDC A?@E'1AC' =? ' @CJ' ?A ' @] @@E ?>' GA' @=C %'G F' AC' &H FA ' F=CE' =IA C%' =?E'G F'AC'G FA ' A =C ' A?1 ?@J@? H1"3

'' ': 14 ; /'4 ; <=4 =4+4/' 49+4' 49/' 2(/' 7+=' '' 49/' ; '/

& F@C@' =?' ?E J@?' A?' F@' C@D@= @E' = @'= @>@E' F=' F@' DC A?@C ' I@ ?>' @JD A @E' ?' =' @C = ?' J ?@% = @E' =J' C@=' J ?@%' G F ?' F@' A ? ' A1' AC?G= %' FC@@' FA =?E' DA ?E ' G@ >F 'A1' ADD@C' AC@%' F@'DCAD@C 'A1' A @DF' @'=?E'A F@C %' F@' =EB@? C@C ' ?' F@' = E' J ?@' = @E' =J' C@=' J ?@% F@?' =?E

W' B' +44/=2'' ' 792' : &&/(/:'&(2 ;'49/' 249/(' 6<:)/=' 2 '' 49/' 1+=/', (/=/(J/: W^B' /' B' /33' ', ', ', IH.

" B' 9/' (/" /+*/:' 1*+<=/' 7+=' 12'& '/:' 42' 2('7+**' 9/' '/7'1*+<=/' /V4/' :=' 42

')*+' :'=?E' (/*+' :' =' 42' 9+(:'*+32<(' =//'=/1' ..E' J2*' ' "' ' '? +=' 42' =2* 4+(# 12'& '/ ;/'4' =//'=/1' ..N' J2*' .' "' EM?' +' :' +=' 42' =<(/4 /=' =//' =//' ..D' " ! J2*' ' "' E. ' =' 42' "(21//: ')=' +)+ '=4' +11/==2(/='=//'J2*' .' "' .DY' 1 /1=

b =? ' %A1' 1 ? F@E' > AB@ % =?E' = E' F@ J ' A?' F@' = I @' ?' F@' DD@C' CAA J % = A' D=C ' A1' F@' = J @' DC@ J @ % G F' ? @? ' 1C= E @? ' A' A I = ?' D= J @? ' 1AC' F@ J ' = ' 1AC' A' J =? ' > AB@ ' 1 ? F@E' I ' F@ J ; DA?' =' = @' C@ @CB@E% ' G= ' F@ E% A?' F@' = FAC 'A1' F@' DC@ @E ?>' = @% F= ' F ' G= ' ?A ' =C @? % N d

<4 &'+' =/(J+'4 (/ ; 2J/')22 :-' 2& 9 -' ; +=4/(' **# 2(: /(' 42' /'+3*/' + '249/(' 42' =/** 49/ ;' 42' 9 -' ; +=4/(' <' : /(' +' "(/P 12 '1/(4/ :' : /=) ' ' 9/' -')< *4# 2& *+(1/ '#' +*492<)9' 49/')22 :-' 3/' '24 +14<+**# =2* :' 42' 49/' ; +=4/(

DA?' =?' ?E J @? ' 1AC' =C @? ' =>= ? ' * =?? ?>' =?E' J F% 1' =DD@=C@E' F= ' * =?? ?>' G= ' ?' F@' @CB @' A1' F@' DCA @ AC% =?E' F=E' F@' =C@' A1' F ' G=C@FA @% ?' &F F' F@' I=> ' GF F' F@' DCA @ AC' @E' ?' F ' C=E@' = ' =' DA = A' E@= @C' G@C@' <@D ' J F' F=E' 1AC' AJ @' @=C ' DD @E' F@' DCA @ AC' G F' I=> % GF F' F@' J=E@% =?E' 1CA J' J @' A' J @% GF@?' F@' F=E' 1 ? F@E' =' A % F ' AJ ' G!=' A' =<@' F@ J % =?E' D ' F@ J ' EAG?' = ' F@' G=C@FA @' EAAC' A1' F@' DCA @ AC% =?E' FAC ' =1 @CG=CE ' @ F@C' F@' AC' F ' G 1@' @E' A' AJ @' =?E' C@ @ B@' D= J @? ' 1AC' F@ J ' 1CA J ' F@' DCA @T AC ' ?@' J AC? ?>' * =?? ?>' ICA >F ' A ' A1' F@' G=C@FA @' G@? 1A C' I=> % GF F' F=E' I @@?' J =C<@E' I ' F@' DCA @ AC% =?E' D ' F@ J ' = ' F@' D = @' GF@C@' J F' @E' A' E@DA ' F@' F=> ' F@' ICA >F ' 1AC' F@' DCA @ AC' FAC ' =1 @CG=CE ' J FH' G 1@' = J @% =?E' = <@E' D= J @? ' 1AC' F@ J ' = ' 1AC' I=> ' F= ' F@C' F I=?E' F=E' ICA >F ' F@C@' F= ' J AC? ?>$ DA?' F ' J F' G= ' @? ' 1AC% =?E' = <@E' GF@ F@C' I@' I=E' ICA >F ' FA @' I=> ' F@C@;' F@' = E' 7) @ % =?E' F= ' F@' =?E F ' G 1@' F=E' I@@?' GAC< ?>' = ' F@ J' ' G@ B@' AH A < F@' ? >I ' I@1AC@ H 7 " = %H = E' F@' DCA @ AC% 7 FA @' I=> ' =C@' J ?@ H 7) @ %H C@D @E' J F%! F@ ' G ' I@' A C ' GF@?' A ' F=B@' D= E' 1AC' F@ J H F@' DCA @ AC' F@?' DA ? @E' A ' F@' J =C< ' A?' F@ J ' F@' Z C ' G@C@' A E' F= ' 1' F@ ' G@C@' = 1 @E' F= ' * =?? ?>' ICA >F ' F ' J = @CH ' I=> ' A ' A1' F@' G=C@FA @' =?E' D = @E' F@ J ' I ' F@' EAAC' 1AC' F@' D CDA @' A1' @?=I ?>' J F' A' C@ @ B@' D= J @? ' 1AC' F@ J ' 1CA J ' F ' J = @C% =?E' G F' ? @? ' F= ' F@' FA E' EA' A' = ' 1' F@ ' F=E' I@@?' ?@G' I=> ' 1 ? F@E' I ' J F% 1AC' GF F' F@' G= ' @? @E' A' I@' D= E% F= ' F= ' GA E' I@' =C @? ' ; =?E' 1' F@ ' G@C@' = 1 @E' F= ' F ' F=E' I@@?' A' EA?@' I ' * =?? ?>' ?' D C =? @' A1' DC@B A ' @?>=>@ J @? ' I@ G@@?' F J ' =?E' J F% F= ' J F% FA >F' =I @? ' GF@?' F@' I=> ' G@C@' A' C@ J AB@E% GA E' I@' =?' = @ AC ' I@1AC@' F@' 1= ' A' F@' =C @? ' ; =?E' F@' Z C ' F=B ?>' 1A ?E' F= ' F@' I=> ' F=E' I@@?' A'C@ J AB@E' 1AC' F@' D CDA @% =?E' G F' F@' ? @? ' =1AC@ = E% =?E' F= ' F@' = J @' F=E' I@@?' EA?@' ?' D C =? @' A1' =' DC@B A ' =CC=?>@ J @? ' I@ G@@?' F J ' =?E' J F% =?E' F=B ?>' 1A ?E' IA F' > ;' ' G= ' 1 @ E% DA?' =' = @' C@ @CB@E% F= ' F@' E C@ A?' A' F@' Z C ' G= ' C >F % =?E' F= ' IA F' DC A?@C ' 1 =E' I@@?' DCAD@C ' A?B @E% "NB

&' '4+0/-' S-')22 :-' 7(2')P &<**# '' 2(: /(' 42' 2&&/(' 49/ ;' ' &2(' =+*/' 42' +-' 49/')22 :-' 2& +' 249/(' '4/ ' : ')' 42

?' =?' ?E J @? ' 1AC' @= ?>' 1= % ' =DD@=C@E' F= ' F@' DC A?@C' G= ' =' @CB=? ' A1' F@' DCA @ AC% GFA' G= ' =' = AG F=?E @C ' F@' DCA @ AC% @? @C = ? ?>' AJ @' D A?% J =C<@E' =' b =? ' A1' 1= % GF F' G= ' ?' =' CAA J ' = IAB@' F ' =?E @ CAA J ' ?' F@' = @C' CAA J ' G= ' =' D= C' A1' = @ ' @E' ?' G@ >F ?>' F@' 1= ' F@' DCA @ AC' IA >F ' 1AC' F@' D CDA @' A1' F ' C=E@ ' & F@?' F@' DC A?@C' G@? ' A' E ??@C

R&B /) ' 1 ' 22*/ ' ' ' ' ' ')- ' (2 ; "42 ' ' ' =+ : ' 0 &' 49 -' '3// '' 49/ ' & (=4 4 ; /' 49/' "2 ' 4 9+ :' 3// '' (+ =/ : ' ' =92<* :' 6+J/' 3// '' ' 1* ' / : ' 42' 49 ' 0' 49+4' 49/(/' 7+-' =<&& 1 / ' 4 9/(/' 42' ; +0/' 2<4 49/' <4 49+4' &' 1*/+(*#' '24 49/' W6</=4 2 '' ? 49/' ' 0 ' ; <19

'' &+*=/' "(/4/ ' 1/-' +-' '' *+(1/ '#' ? +' :' 49/' T</=4 2 '' '' 49/=/' 1+=/-' =' : ' :' 49/' "(=2 ' /(' ' 4/ ' :' 42' +==< ; /' =<19' +' :2 ; ' 2 '' 2J/(' 49/')22 :-' +-' 7+-' 792**# '12 ' = =4/ ' 4 7 49' 49/' ; +=4/(S-' 27 ' /(=9 "' ^ "NB /) ' ' +' ' ')' /+(=' ' 'G.

F@C@' G= ' ?A' 1= ' ?' F@' = @ % =?E' F@' G=C@FA @' G= ' A <@E ' F@' +""(2"(+4/'
DC A?@C' C@ C?@E' =?E' = <@E' 1AC' F@' <@ ' A1' F@' G=C@FA @% =?E' "(21//:-' 42'
G@?' ' ?% =< ?>' ?A F ?>' ?' G F' F J ' ?' =' FAC ' J @' F@' C@ C?@E'
F@' <@ ' A' F@' DCA @ AC' =?E' G@?' =G= ' F@' DCA @ AC' F@?' *+(1/'#
&!@?' ? A' N F@' CAA J ' AB@Cd' F@' =?E @' CAA J % =?E' 1A ?E' F= ' = ' F@ %
1= ' F@' F=E' J =C<@E' F=E' I@@?' C@ J AB@E% D ' ? A' =' I=>% =?E' D = @E'
?' F@' = @ ' ?' F@' =?E @' CAA J ' F@' DCA @ AC' F@?' G@?' ? A'
F@' C@@ ' =?E' J @ ' A?@' & A?' =?E' F@' DC A?@C ' F@' = @C' A?'
I@ ?>' = <@E' GF@ @' F@' 1= ' = J @' 1CA J ' F= ' G= ' ?' F@' = @ % = E' '
I@ A?>@E' A' =' I F@C' ?= J @E' (A I ? A?' -' =?E' 3 A?% ?' F@'
DC A?@CH ' DC@ @? @% = @E' F= ' F@' F=E' A J @' A' G@ >F' F@' 1= %
GF F' F@' F=E' I CA >F ' 1CA J ' (A I ? A?H ' F@' DCA @ AC' A E'
& A?' F@' GA E' ?A ' D= ' F J ' 1AC' F@' 1= ' ? ' F@' F=E ' @@?'
(A I ? A?% =?E' @1 % F@%G=C@FA @' 1AC' F= ' D CDA @ ' & A?' =?E'
F@' DC A?@C' F@?' C=?' =G= ' F@' Z C ' G@C@' E C@ @E' F= ' 1' F@ '
G@C@' = 1 @E' F= ' F@' DC A?@C' C@ J AB@E' F@' 1= ' 1CA J ' F@' DD@C'
CAA J ' A' F@' =?E @' CAA J % =?E' D = @E' ' ?' F@' = @ ' G F' F@'
? @? A?' A1' @ ?>' ' A' F@' DCA @ AC' = ' 1= ' I@ A?> ?>' A'
(A I ? A?% =?E' G F' F@' ? @? A?' A1' =DDCADC = ?>' F@' DCA @@E ' A'
F ' AG?' @% F@' A11@? @' = J A ? @E' A' =C @? ' F@' Z C ' A?B @E%
=?E' DA?' =' = @' C@ @CB@E% F@' Z E>@ ' G@C@' = ' A1' AD ? A?' F= ' F@'
A11@? @' G= ' =C @? ' F@' DC A?@C' AA<' F@' 1= ' ? @?E ?>' A' E@= '
G F' 1' = ' F ' AG?' -' A' C@= ' ' = ' F@' DCAD@C ' A1' F@' = @>@E'
B@?EAC ' F@' ? @? A?' G= ' F= ' F@' 1= ' FA E' ?@B@C' C@B@C ' A' Fu'
AG?@C' = ' F ' AG?' DCAD@C ' @] @D ' I ' = @' ' G= % F@C@1AC@%'
@B@C@E' 1CA J ' F@' AG?@ ' A J D @ @ % ? @ ' F@' FA @' A' I ' I= <'
GF= ' G= ' ?' C F'%F ' DCAD@C ' F@' A? ' b @ A?' = @ J D @E'
A' I@' C= @E' F@C@' G= ' = ' A' F@' 6 !& > ' * "6 #! ' F@' @? ' A'
E@DC B@' F@' AG?@C' A1' F ' DCAD@C ' & F= ' I @ @C' DCAA1' A E' F@C@'
I@' A1' F' ? @? ' F=?' F@' = @C A?' A1' F' =' C >F ' A1' AG?@C F D'
I ' F@' DC A?@C' = ' A' @? @' F J ' A' @ ' 'V1?3
F@' DC A?@C' G= ' ?E @E' 1AC' h @= ?>' FC@@' C= G= ' <@ ' =?E' 4/+* ')'
FC@@' D @ @ ' A1' D= @ IA=CE% = E' ?' A?@' A ?' = ' F@' DCAD@C ' A1' C= G= <@ %
F@' A?EA?' =?E' " AC F & @ @C?' (= G= ' A J D=? % =?E' ?' =?A F@C'
= ' F= ' A1' F@' = A? J = @C' = ' =' = A?' F@' DC A?@C' G@?' ? A'
F@' <@ A1 @' = ' F@' = A?% AA<' A ' FC@@ 1 C = ' <@ ' 1AC'
F@' ZA C?@ ' 1CA J ' F= ' = A?' A') AC<% =?E' = J D@E' F@ J ' ?' F@'
J = F ?@' 1AC' @ I C =C ' 9 ' F@' = ' C= ?' A?' F= ' E= ' 1AC') AC<' F=E'
>A?@% =?E' F@' DC A?@C' ?' B= ?' C @E' A' C@ = J D' F@' <@ ' G F'
=?A F@C' E= @ ' <@ ' = J D@E' 1AC' A?@' E= ' J >F ' I@' C@ = J D@E' 1AC'
=?A F@C' E= % =?E' A' C@?E@C@E' =B= =I @ ' ' G= ' A I Z@ @E' F= ' F@C@'
G= ' ?A' F' =I A @' =< ?>' =G= ' G FA ' =?' ? @? A?' A' C@ AC@'
= ' A' A? @' F@' A11@? @' A1' =C @? $' I ' 5= @ A?% % F@ E'
F= ' ' G= ' =' b @ A?' 1AC' F@' Z C % GF@ F@C' F@' DC A?@C' AA<' F@'
<@ ' G F' =?' ? @? A?' A' A?B@C ' F@ J ' A' F ' AG?' @' =?E'
E@1C= E' F@' A J D=? ' A1' F@ J ';' =?E' A E' F@' Z C ' F= ' 1' F@'
DC A?@C' AA<' F@' ' <@ ' G F' ? @? ' A' @' F@ J ' 1AC' F ' AG?'
D CDA @ % GF@ F@C' A' > B@' A' 1C @?E % AC' A' @ ' F@ J % AC' A' C=B@ '
I ' J @=? ' A1' F@ J % ' GA E' ?A ' I@' F@' @ ' =C @? % FA >F' F@

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& F@C@' ' =DD@=C@E' F= ' =' J =C@' G= ' J @E%' =?E' F@' ?@] 'E= ' F@'DC A?@C' = E' F= ' 1' F@'DCA @ AC' GA E' >@ ' F@' =>@? ' A'D= ' F@'DC A?@C' 9 ' AC' %' AJ@'A1' F@' ?@ >FIA C ' GA E' >A' =?E' 1 ?E' F@' J =C@%' =?E' F= ' ? @ ' F@' J = @C' G= ' @ @E%' F@' J =C@' GA E' I@' C@ JAB@E' =' E= H ' ZA C?@ ';' =?E' F@C@ DA?' ' G= ' =>C@@E' I ' F@' D !A @@ ACH ' A?' A' > B@' F@'DC A?@C' - %' = ' F@' A E' ?A ' >@ ' F@' J =C@' A F@CG @%' =?E' J = @ ' F@'DCA @ AC' D= E' F@'DC A?@C %' =?E' F@' J =C@' =1 @CG=CE ' G= ' C@ C?@E';' F@ Z C ' G@C@' A E' F= ' 1' F@' DC A?@C' F=E' >A ' AJ@' D@C A?' A' =<@' =G= ' F@' J =C@' G F' F@' ? @? A?' A1' AI > ?>' F@'DCA @ AC' A' D= ' F J ' =' J' A1' JA?@ ' 1AC' F@' C@ C?' A1' F@' J =C@%' GF F' ?' 1= ' F@' <?@G' F@' F=E' ?A' = J ' 1AC%' ' G= ' =' 1@ A? A ' @= ?>' A1' F@' J =C@%' =?E' F@ ' A?B @E' F@' DC A?@C';' =?E%' DA?' =' = @' C@ @CB@E%' A?' F@' b @ A?' GF@ F@C' F@' E C@ A?' A' F@' Z C ' G= ' ACC@ %' ' G= ' F@ E' F= ' F@' A?B A?' G= ' C >F %' =?E' F= ' F@' Z C ' G@C@' C >F ' ?' F@ C' 1 ?E ?>%' = ' F@C@' G= ' @B E@? @' A' Z 1 ' F' =' 1 ?E ?> ' 7S3

9/' 4+0 ') ; +#' 9/' 3#' ; =4+0/ ' 7 49P 2<4' +' #

' =< ?>' A1' =?A F@CH ' DCAD@C ' J = ' = A' I@' I ' J =<@%' =C ?>' 1CA J ' F@@E @ ?@ ' AC' = E@? %' ?' GF F' F@' 6 !& > '* "6 #!' F= ' ?A' D=C ' F %' 1' F@' F@@D' A1' ' C= ' 1CA J ' F ' 1 A <' A' F@' 1 A <' A1 %' =?E' ' EC B@' F@ J ' = A?>' G F' F ' AG?' 1 A <%' =?E%' I ' J =<@%' G FA ' <?AG ?>' AC' =< ?>' F@@E' A1' F@' E 11@C@? @%' F@=C' F@ J %' ' ' ?A' 1@ A? ' ' 1' ' <?@G' F@ J ' A' I@' F=' F@@D' A1' =?A F@C%' D@C A?%' =?E' C @E' A' A? @=' F= ' 1= ;' 1% 1AC' ? =? @%' 1 ?E ?>' =?T A F@CH ' J =C<' DA?' F@ J %' F@' E@1= @E' %' =?E' ' ' F ' AG?' J =C<' DA?' F@ J %' F ' GA E' I@' @B E@? @' A1' 1@ A? %' N=d' ?E' =' <@' A? A?' J = ' I@' EC=G?%' GF@C@' =' D=C ' F=B ?>' DA @ A?' A1' =?A F@CH ' DCAD@C %' =DD@=C ' E@ CA ' A1' A? @= ?>' %' AC' A1' DC@B@? ?>' F@' J D@ A?' A1' F@' AG?@C%' AC' A1' =? ' D@C A?' GFA' J = ' J =<@' F@' E T AB@C ';' AC' GF@C@%' I@ ?>' = <@E%' F@' E@? @ ' F=B ?>' F@' DCAD@C %' FA >F' ' ' @=C' F= ' F@' <?@G' A1' ' I@ ?>' ?' F ' DA @ A?' ?' F@' A F@C' F=?E%' =' J AE@' A1' A?E ' A1' =' E 11@C@? ' E@ C D A?' ?' F@ @' @B@C= ' C@ D@ ' G ' I@' @B E@? @' A' C@I ' =? ' 1@ A? A ' ? @? ' N d

+'' =4/+* ')' * =' 27 '')52 := ' J =?' J = ' I@' > ' A1' 1@ A? ' ?' =< ?>' F ' AG?' >AAE ;' ?= J @ %' GF@C@%' F=B ?>' I= @E' F@ J ' A' =?A F@ 'D@C A?%' F@' =1 @CG=CE ' @= ' F@ J ' 1CA J ' F' D@C A?' ?' ACE@C' A' F=C>@' F A ' 1AC' F@ J ' ?' =?' = A?%' AC' CA I ' F@' A F@C' D@C A?' A1 ' F@ J ' ?' ACE@C' A' F=C>@' F@' F ?EC@E%' N d' %' 1' ' =<@' =G= ' F@' C@@ ' A1' %' =?E' ' F@ J ' ? A' I A=CE ;' AC%' 1' ' =<@' F@' A F' A1' ' =?E' J =<@' ' ? A' =' EA I @ ;' ' J = ' =<@' F@' I A=CE ' AC' F@' A F%' =?E' ' G ' ?A ' I@' 1@ A? %' 1#3' A' 1' ' =<@' F@' F= ' AC' AJ' A1' %' =?E' J ?> @' ' G F' F ' AG?' F@=D' AC' A <%' AC' =<@' H ' A F%' =?E' @J ICA E@C' ;' ' J = ' C@ =<@' F@' GFA @' F@=D' A1' AC?' AC' A <' A1' F= ' N= ' @= ' A' J F' A1' F@ J ' = ' =??A ' I@' @= ' E ?> F@E' 1CA J ' F ' AG?d%' =?E' F@' >=CJ @? ' G F' F@' @J ICA E@C ;' =?E' F' C@ =< ?>' G ' I@' ?A' 1@ A? %' N@d

"5B' /)' ,' //19+ ; ' A' 2V' ' M ' 49/' 1+=/ ' .E. ' (+44/=2 ' ' ' +*=2' 9/*:' 49+4' 49/' " B' .' +*/ ' YMY ' AMD =4+4 2 ' ; +=4/(' 9+:' ' 2' "(2"/(4# '' 49/' " B' -' +=4' ' ' %' ' .%' D' 4 10/4=' ' //' /) ' &' 2<*42 ' ' .' /' ' ' W1B' .' +*/ ' Y.H ' G' +=4' ' ' 1' .Y ' YME ' ' . *9+ ; ' HN' ' ' ' ' =' NA ' "' YAN ' H' '=4' . .M .MN' .F H^ ' U R B' .' +*/ ' Y.H RVB' /)' I' M 0 2 ' ' /**' D' 2V' ' ' W1B' .' +*/ ' A.H ' G' +=4' ' ' 1' .Y' HHD' 9 =' : /1 = 2 '' 7+=' '' (/*+' : ' // =' NA' "' YAN

' DA?' F ' ' ' I J @E% F=' FA >F' F@' C >F ' A' =<@' AC?' I ' > @=? ?>' F=' ?A' @] @? @% @] @D ' DA I ' I ' AJ' ?' AJ@' D=C =C' D = @ %' N d F' =' =< ?>' G ' ?A ' ?@ @ =C ' =J A ?' A' =' 1@ A? ' ?EA I @E ' ' G ' I@' =?' = ' AD@?% <@' A F@C' = ' A1' C@ D= ' GF F' F=B@' I@@?' J@? A?@E% A' DCAA1' A1' =' 1@ A? A ' ? @? A?% DA?' GF F' ' ' D@ =C ' F@' DCAB ? @' A1' F@' Z C ' A' E@ @C J ?@; I ' ' =?' F=CE ' I@' A? @?E@E' F=' F' =< ?>' G ' =J A ?' A' =C @? % 1' ' FA E' =DD@=C' A' F=B@' I@@?' J@C@ '=' =< ?>' A1' F@' AC?' @1 ' A?' F@' >CA ? F =1 @C' F@' CAD' F=E' I@@?' =CC @E% =?E' A' F=B@' I@@?' EA?@' AD@? % E@C' =' = J' A1' C >F ' A ' = A>@ F@C' G FA ' A A C% FA >F' ?A ' =D=I @' A1' I@ ?>' @ =IT F@E' I ' DCAA1% AC' A' F=B@' I@@?' EA?@' ?E@C' =?' =DD=C@?' =? A?% =C ?>' 1CA J ' 1AC J @C' J =CH= ' A1' F@' =J @' ?E B E = % AC' A1' A F@C ' ?' F@' ?@ >F I A CFAAE% F=B ?>' I@@?' = AG@E' IZ1' F@' A D @C' A1' F@' =?E

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' F=' I@@?' AI @CB@E% G F' C@ D@ ' A' = @ ' GF@C@' >AAE ' F=B@' I@@?' =<@?' A?' =' = J' A1' C >F % F=' 1' F@C@' I@' =? '1= C' DC@ @? @' A1' DCAD@C ' AC' C >F ' A1' F@' DC A?@C% AC' 1' ' I@' ICA >F ' ? A' EA I ' = ' = % F@' A C ' G ' E C@ ' =?' = b = % NJ d F@' J= @C' A1' =' 5C =?' B@ @ % =D C@E' I '=' C F' F D% =?E' =CC @E' ? A' F@' DAC ' A1' & @ J A F% G=' F@ E' ?A ' A' I@' > ' A1' =C @? ' ?' =< ?>' >AAE ' 1CA J ' F@' B@ @ ' ?E@C' F@' D=C =C' C J =? @ ; F@C@' I@ ?>' ?A' @B E@? @' F=' F@' AA<' F@ J ' 1AC' F@' D CDA @' A1' A?B@C ?>' F@ J ' A' F ' AG?' DC B= @' @ ' 7 3' b

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& F@C@' F@C@' ' @=C ' F@' 6 !& > *>"6 #!' ?' AJ@' A1' F@' D=C @ ' A? @C?@E' ?' =' 1@ A? A ' =< ?>% ' J = ' I@' ?@>= B@E' = ' A' =?A F@C' D=C % 1' ' =DD@=C' F= ' F' A F@C' D=C ' F=E' =' E 11@C@?' ' AIZ@ ' ?' B @G' 1CA J ' F= ' A1' A I = ? ?>' =? ' F=C@% A1' F@' A @?' DCAD@C ' # A?= ' G= ' ?E @E' 1AC' =' I C> =C ' ?' F@' FA @' A1' =' * C ' 5AA @% =?E' 3 = >F=?' = ' = @ AC ' I@1AC@' =?E' =1 @C' F@' 1= ' A' F@' 7 = E' 1@ A? ' =?E' I C> =C H ' =DD@=C@E' F= ' # A?= % = ' F@' ? >= A?' A1' 3 = >F=?% GFA' G= ' ?' F@' @ J D A J @?' ' A1' F@' 5A @' A11 @' = ' AG C@@ % F=E' A? @C @E' G F' FC@@' A F@C' J @?% A' CA I ' F@' FA @' A1' * C ' 5AA @% =?E' F= ' ' G= ' =>C@@E' F= ' 3 = >F=?' =?E' =?A F@C' A11 @C' FA E' @' ?' G= ' A' =DDC@F@?E' F@' FC@@' A F@C' J @?% =?E' F= ' F@' C@G=CE' 1AC' F@ C' A?B A?' FA E' I@' E B E@E' = J A?> ' F@ J ' 3 = >F=?' F=E' A E' * C ' 5AA @' F= ' F Z A @' GA E' I@' CA I I@E' F= ' ? >F % E@ C ?>' F J ' A' J =C<' =' D @ @' A1' A F% =?E' @=B@' ' A?' F@' A ? @C% A' =<@' =C@' A'1= @?' F@' = F' A1' F@' EAAC% =?E' A' J =<@' A' C@ =? @% = ' F@' FA E' ?A ' A @' =? F ?>; A' GF F' 5AA @' A?T @? @E% =?E' @1 ' F@' FA @' G F' 3 = >F=?' =?E' F@' A F@C' A11 @C' A' G = F; GF F' F@ ' E E' ?' =' D= =>@' A?' F@' ADDA @' E@' A1' F@' C@@ ' * C ' 5AA @H ' FA @' G= ' CA I I@E' I ' # A?= ' =?E' F@' FC@@' A F@C' J @?; =?E' F@' FC@@' J @?' GFA' = AJ D=? @E' # A?= ' G@C@' = J A ' J J @E = @ ' =DDC@F@?E@E' I ' 3 = >F=?' =?E' =CC@ % =?E' F=E' I@@?' C @E' = ' =' 1AC J @C' @ A? ' 1AC' I C> =C ';' I ' A?B @E' A? ' A1' @= ?>' ?' F@' EG@ ?> FA @' A' F@' B= @' = E' ?' F@' ?E

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F@' DC A?@C' G= ' A?B @E' A1' @= ?>' = ' A %' 1CA J ' =?' A11 @C' A1' F@' DA A11 @%' =' DA ' @ @C ' F@' DC A?@C' F=E' I@@?' AA<' A' *C ' =C I @ ' A1' D A?' FAD%' =?E' F=E' > B@?' ?A @' A' @=B@%' =?E' G= ' ?' C@= ' G F' *C ' #=?>@C1 @ E' A1' F@ @?F= J %' 1AC' =' J =C' = A? ' * C ' # ' F=E' A? @? @E' A' @J D A ' F@C' 1' =' = 1= AC ' =? G@C' 1CA J ' * C ' ' FA E' I@' C@ C?@E' A' =' @ @C' J=< ?>' @?b C @ ' = ' A' F@C' F=C= @C ' F ' @ @C%' F@' IZ@ ' A1' F@' DC@ @? ' ?E J @? %' G= ' GC @?' I ' * C ' # %' E C@ @E' A' * C ' %' =?E' DA @E' = ' F@ @?F= J %' =?E' G= ' E ' 1ACG=CE@E' A' F@ ' DA ' A11 @' = ' (A ' * C ' ' F=B ?>' 1A ?E' 1= ' G F' F@' DC A?@C%' E F=C>@E' F@C' 1CA J ' F@C' @CB @%' =?E' A E' F@C' F= ' =' F=C= @C' GJ E' ?A ' I@' > B@?' A' F@C ' F@' E= ' =1 @C' F@C' E J = ' F@' G@? ' A' F@' DA A11 @' = ' (A ' * C ' ' F=B ?>' 1A ?E' 1= ' G F' F@' DC A?@C%' E F=C>@E' F@C' 1CA J ' F@C' @CB @%' =?E' A E' F@C' F= ' =' F=C= @C' GJ @?' I ' * C ' # %' =?E' I C? ' %' I ' E@ B@C@E' F@' A F@C ' A' = ' D@C A?%' GFA' =1@ ' A?B@ @E' F@ J ' A' * C ' =?E' * C ' ' ?E%' DA?' =' = @' C@ @CB@E%' DA?' F@' b @ A?' GF@ F@C' F@' =< ?>' =?E' E@ CA ?>' A1' F@' @ @C' ?E@C' F@ @' C J =? @ ' = J A ? @E' A' =C @? % = ' 1F@' Z E>@ ' DC@ @? %' @] @D ' 5 = %' %' G@C@' E1' AD ? A?' F= ' F ' G= ' =C @? ' ;' 1AC' DDA ?>' F= ' ' G= ' =' ?@ @ =C ' ?> !@ ' E @? ' ?' F= ' C J @%' F= ' ' FA E' F@' EA?@' > "!' 6> 6' NGF F' &=' ?A ' =E J @Ed%' F@C@' G@C@' 11 @? ' =EB=? =>@ ' A' I@' AI = ?@E' F ' F@' DC A?@C' ?' J =< ?>' =G= ' G F' F@' GC @?' F=C= @C%' NCd

U (2')&<**# 4+0 ')' +' :' '+/*4 ')' +'' (2'' +V*/' 42' 234+ '' ; 2(/' 7+)/=

F@' DC A?@C' G= ' ?E @E' 1AC' F@' A11@? @' A1' @= ?>' =?' CA?' =] @%' F@' DCAD@C ' A1' & = J ' & = J ' =?E' A F@C %' F ' J = @C ' ' =DD@=C@E' F= ' F@' DC A?@C' G= ' ?' F@' @ J D A J @? ' A1' * @ C ' & = J %' CA? J = @C %' = ' =' D EE @C;' F ' E ' I@ ?>' A' A?B@C ' D >' CA?' ? A' D EE @' I = C;' 1AC' GF F' I @' G= ' D= E' = ACE ?>' A' F@' G@ >F ' A1' F@' D EE @' I = C' DCAE @E' 1CA J ' F '1 C?= @' $ =?E' F= ' F@' DC A?@C' FC@G' ? A' I ' 1 C?= @' =?' CA?' =] @' I@ A?> ?>' A' F ' J= @C

WGd /) ' U - ' ' .' /** ' ' ' HYA' G' ' ' EAN' //' 49 =' 1+=/' ; 2(/' &<**# =4+4/ : ' ' 0 ' 8 U

/) ' 2' /=' .' /' ' ' ' .EE' G' ' ' ' GHY' '' 49/' 12<(=/' 2& 49/' +()< ; / '4' 2**210' ' =+ : ' 0 L2(49/' "(=2' 4 &S' 12<' =/* =' +()< ; / '4' 49/' 1+=/' 72<*:' 3/' 49/' =+ ; /' & 49/' "(=2' /(9+:' " 10/ :' 49/' "2=4 ; +' S' "210/4' 2& 49/' */44/(

'=//' '2' : &&/(/ '1/' U ** 4'3/' 12' 4/ ' : / :' 49+4' " 10 ')' +' (19' ; +' S' "210/4' ' 24' 42' ; +0/' #2<(=/*& (19' ' 3<4' 42' ; +0/' 9 ;' "22(' 72<*:' ' 24' 3/' +'*+(1/ '#^$ +(0/' ' 0 <" "2=/' #2<' " 10' S' "210/4' 42 J/' 42' +' 3/))+(' '' 49/' ' /V4' =4(//4 $ //' /) ' ! ** ')=' L ' ' L ' HY' ' H ' 8 U

GF ' F=E' 1AC J @C ' I @ ?>' @E' 1AC' =' C= J ' =C ' ' G= ' DCAB@E' F= ' F@' B= @' A1' F@' =] @' ?' ' 1AC J @C' = @' G= ' 1CA J ' ' A' . %' =?E' F= ' F@' I @?@1 ' A' F@' DC A?@C' G= ' =' @' I @ @C' F=?' =' D@?? ' ?E= %' ' %' A E' F@' Z C ' F= ' ' G= ' J =? 1@ ' F@' = ' EA?@' I ' F@' DC A?@C' = @E' F@' E@ C A?' A1' F@' =] @ C@@' ?' ' 1AC J @C' = @%' A' F= ' ' ?@B@C' A E' I @' C@ AC@E' ?' D@ @' A' F@' J = @C ' = ' =?' =] @ ' C@@%' FA >F' ' J >F ' ? C@= @' F@' J = ' A1' CA?' DCAE @E' 1CA J ' F@' 1 C?= @' ;' =?E' 1' F@ ' G@C@' = 1 @E' F= ' F@' FCAG ?>' F@' =] @' ? A' F@' 1 C?= @' G= ' = ' EA?@' I ' F J ' G FA ' F@' A? @?' ' =?E' =>= ? ' F@' G ' A1' F ' J = @C %' =?E' F= ' F@' D= ' A1' F@' DC A?@C' G= ' F@C@I ' ? C@ * @E%%=?E' F= ' F ' A I Z@ ' =?E' J A B@' G= ' A' A I = ?' F' ? C@= @' A1' D= %' = ' F= ' G= ' ?@ @ =C %' ?' DA ? ' A1' =G%' A' A? @' =' 1@ A? ' ? ' J =E@' A ' F= ' F@' >= ?' A' F@' DC A?@C' G= ' ?E@@E' @] C@ J @ ' J = %' ?' F ' D=C =C' ? =? @' ;' I ' F= ' F@' F=C= @C' =?E' ?= C@' A1' F@' A11@? @' E E' ?A ' E@D@?E' DA?' F@' @] @? ' A1' F@' >= ?' A' F@' D=C ' A11@?E ?>' AC' ?Z C ' A' F@' J = @C;' GF F%' FAG@B@C%' ' J ' I @' AI @CB@E%' G@C@' @] C@ J @ ' E DCADACT A?= @' A' @= F' A F@C;' =?E' GF F' A ' A' F@' J = @C ' J >F ' I @' =CC @E' = J A ' A' =?' ? = =I @' = J A ?' I ' F@' ADDAC ? ' A1' C@D@= ?>' F@' A11@? @%' 1 3

@1AC@' F@' - ' ' -.' 3 @ ' ' +' ' G= ' E@ E@E' F= ' =?E@ ?@ ' ' 4+0/ '' 42' =< ?>' F@' J = @CH ' AC?%' FA >F' A' > B@' F@' J = @CH ' FAC @ %' G= ' &// :' +' ; +=4/(S= 1@ A? ;' @ D@ = ' 1' I ' A' 1@@E ?>' F@ J ' F@' @CB=? H ' = I A C' G= ' <@ ' A' I @' E J ? F@E%' 1 3

' F@' - ' ,' -.4 3 @ %' ' %' @ ' $' 1>3' 7 1' =? ' @CB=? ' F= %' /(J+' 4=' A? C=C ' A' F@' ACE@C ' A1' F ' J = @C%' =<@' 1CA J ' F ' DA @ A?' =? ' 4+0 ')' 49/ (' AC?%' D @%' CAA %' AC' A F@C' 1AAE%' 1AC' F@' D CDA @' A1' > B ?>' F@' ; +=4/(S' 12 ; ' = J @' AC' A1' F=B ?>' F@' = J @' > B@?' A' =? ' FAC @' AC' A F@C' =? J = ' 2 ' K7 492<4 K I @ A?> ?>' A' AC' ?' F@' DA @ A?' A1' F ' J = @C%' F@' @CB=? ' A' +<492(4#' &2(A11@?E ?>' AC' ?Z C ' A' F@' J = @C;' 49/' "<("2=/' 2& DCA @@E@E' =>= ? ' 1AC' 1@ A? %' I ' F= %' A?' A?B A?' A1' F' A11@? @') J ')' 49/' =+ ; /' 42' 49/ (' I @1AC@' GA' Z @ ' A1' F@' D@= @%' = ' F@ C' E C@ A?%' @ F@C' F@' J T ; +=4/(S' 92(=/=' 1 ' DC A?@E%' G F' AC' G FA ' F=CE' =I A C%' 1AC' =? ' @C J ' ?A ' @] @@E ?>' '2') <' *4#' 2& FC@@' J A? F %' AC' @ @' F= ' 1AC1@ ' =?E' D= ' F' D@?= ' = ' F= ' &/*2 '#' 3<4 =DD@=C' A' F@ J ' A' I @' J @@ %' ?A ' @] @@E ?>' F@' J ' A1' 1 B@' DA ?E %' =9+*#' 9/' * +3*/' =?E' 1' F' D@?= ' F= ' ?A ' I @' D= E%' @ F@C' J J @E = @ ' =1 @C' F@' 42' ; /' 4' 2' A?B A?%' AC' G F ?' F' D@C AE' = ' F@' = E' Z @ ' F= ' = ' F@' J @' A1' F@' A?B A?' =DDA ? %' F@' @CB=? ' A' A11@?E ?>' F= ' I @' J DC A?@E%' G F' AC' G FA ' F=CE' =I A C%' 1AC' =? ' @C J ' ?A ' @] @@ET ?>' FC@@' J A? F %' ? @ ' F' D@?= ' F@' AA?@C' D= E$ 5CAB E@E' 27/(' 42' = G= %' F= ' 1' DA?' F@' F@=C ?>' A1' F@' F=C>@' F@' = E' Z @ ' 6(=4 1/' 42' F= ' I @' A1' AD ? A?' F= ' F@' = J @' ' AA' C 1 ?>%' AC' F= ' F@C@' =C@' : = ; =' 1+=/' &' C J =? @ ' ?' F@' = @' GF F' C@?E@C' ' ?@]D@E @?' A' ?1 '=?' : // ; /' 422' D ? F J @?' %' F@ ' F= ' F=B@' DAG@C' A' E J ' F@' F=C>@%' G FA ' 4(&* ') DCA @@E ?>' A' =' A?B A?$ 5CAB E@E' = A%' F= ' 1' DA?' F@' C = ' A1' =? ' @CB=? ' 1AC' 1@ A? A ' =< ?>' 1CA J ' F ' J = @C' =? ' AC?%' D @

1 3' /)' , ' 19+(:=' 2' ; 2<49' < ; ' /) ' , ' ; 49' .' 2V' ' ' .M' "'/(' ==' .EII' /(: 14')< *4#' 9/' 4/V4' =' 9 ')/(' ' +' :' 2*&/' +' 12((/"4' 12"#' 2&' ' ' ' :+*$' '24/' 2&' W]#' 9/' 14' (/1 4/=' 49+4' 049/' 2&&/' 1/' 49/' 1+=/' 79 19' 9/')+J/' 49/' : 42(' ' 2&' 4+0 ')' 12 ; ' 2(' 249/(' &22 :' 3#' +' =/(J+' 4' ' . ' ' ' AHG' ' ' ! &(2 ; ' 49/' "2==/== 2'' 2&' 9 =' ; +=4/(' 12' P W t' /V' 2(& 4' ' +#*/#' ' +' :' 4(+(#' 42' 9 =' 2(: /(=' &2(' 49/' "<("2=/' 2&' ' ' ' HMD' /)' &' +' :*/#' ' ' ') J ')' 49/' =+ ; /' 2(' 2&' 9+J ')' 49/ =+ ; /' AID' +44/=2 ' ' (/==7/** ' <4') J/ ' ' 42' 49/' 92(=/=' 2(' 249/(' +' ; +*=' 2&' =/' /) ' &' (J/44' C @ ' ' ' .NH' =<19' ; +=4/(' =' &/*2 '#' S G' ' ' ' . . I ' (/' ' +' :' *+44'

CAA ¼' AC' A @C' 1AAE' A? J=I @' I ' FAC @ ' AC' A F@C' =? J= ¼' F' @CB=? ' F= ' = @>@' F= ' F@' AA<' F@' =J@' ?E@C' F' C JT =? @ ' = ' GA E' A? @' =?' AZ11@? @' D ? F=I @' ?E@C' F ' ¼' =?E' F@C@A1' F= ' = 1 ' F@' Z C ' F=C>@E' G F' F ' C = ¼' F@?' ' F= ' I@' =G1 '1AC' F' Z C ' A' C@ C?' =' B@CE ' = ACE ?> ;' =?E' F@C@ DA?' F@' A C ' I@1AC@' GF F' F' C = ' F= ' =<@' D = @' F= ' DCA @@E' A' =G=CE' F' D ? F J@? ' =>= ? ' F' @CB=? ' = ' J= ' I@' =G=CE@E' I ' GA' Z @ ' A1' F@' D@=@@' A?' F@' A?B A?' A1' =? ' D@CT A?' ?E@C' F@' DCAB A? ' A1' F ' $ 5CAB E@EL = A¼' F= ' ?' = @' A1' ?A? D= J@? ' A1'=? ' D@?= ' A' I@' J DA @E' I ' F@' A C ' A?' F' @CB=? ¼' F@' F= ' I@' J DC A?@E¼' G F' AC' G FA ' F=CE' =IA C¼' 1AC' =? ' @C J ' ?A ' @] @@E ?>' FC@@' J A? F ¼' = ' F@' A C ' F= ' ACE@C¼' ? @ ' F' D@?= ' I@' AA?@C' D= E H1 3

"/' ')' */44/(=' &(2 ;' 1<(2= 4#

' D=C @ ' A? = ? ?>' @ @C ' G= ' @? ' I ' =' A= F' A1' GF F' F@' DC A?@C' G= ' F@' DCADC @ AC¼' F@' DC A?@C¼' ? @=E' A1' E@ B@C ?>' F@' D=C @ ¼' AD@?@E' ¼' C@=E' F@' @ @C ¼' =?E' E DA @E' A1' F@ J ' = ' F@' FA >F ' DCAD@C;' =?E' ' G= ' F@ E¼' F= ' F ' G= ' =' C@ D= ' =?E' IC@= F' A1' A? C= ¼' I ' ?A' 1@ A? ¼' = FA >F' ' G= ' EA?@' A' >C=T 1 ' AJ@' E @' C A ¼' AC' D@CF=D ' A' DC@B@? ' F@' @ @C ' 1CAJ' =CC B ?>¼' 753

3=4(+14 ')' "('4/ :

&(2 ;' 49/ 2*2 ' +* & 1/

F@' DC A?@C' G= ' ?E @E' 1AC' @= ?>' D @ @ ' A1' D=D@C¼' =?E' ' =DD@=C@E' F= ' GA' B@C ' J DAC =? ' E@ D= F@ ' F=E' I@@?' C@ @ B@E' ?' F@' A A? = ' 11 @¼' =?E' F= ' =' @C = ?' ? J I@C' A1' AD @ ' A1' F@ @' E@ D= F@ ' F=E' I@@?' DC B= @ ' DC ? @E' 1AC' E CZI A?' =J A?>' F@' J @ J I@C ' A1' F@' AB@C? J @? ¼' =?E' AJ@' A1' F@ J ' F=E' I@@?' E@ B@C@E' = ' F@' A A? = ' 11 @¼' =?E' D = @E' A?' =' D¼I @' ?' F= ' A11 @' ;' F@' DC A?@C' F=E' F@@?' ?' F= ' A11 @¼' =?E' A @' A' F@' =I @' GF@C@' F@' AD @ ' G@C@' ?>¼' =?E' FAC ' =1 @CG=CE ' F@' @? ' A?@' A1' F@ @' AD @ ' A' F@' @E AC' A1' F@' 7#= ' " @G H ?@G D=D@C¼' G F' =¼?A @' J =C<@E' 7DC B= @¼H C@b @ ?>' F= ' F@' E@ D= @F' J >F ' I@' ? @C @E' ?' F@' 7#= ' " @G ¼H=?E' = ?>' F= ' ?A' A F@C' ZA C?= ' F=E' C@ @ B@E' =' AD ' F@' @E AC' F=E' ?A' DC@B A ' = b = ? =? @' G F' F@' DC T A?@C' F@' @E AC' GCA @' A' F@' DC A?@C' = ' F@' =EEC@ ' J@? A?@E' ?' F ' @ @C¼' =?E' F@' C@D @E' F= ' ' G= ' 7= ' C >F ¼H I ' F@' E E' ?A ' G F' F ' ?=J @' A' I@' J @? A?@E' ?' =? ' G= ' = ' A??@ @E' G F' F@' D I = A?' F@' E@ D= F@ ' G@C@' D I F@E¼' =?E' ?' A? @b @? @' A1' =' @ @C' 1CAJ' F@' @E AC' F@' DC A?@C' = @E' A?' F J¼' =?E' ? CAT E @E' F J @ 1' = ' F@' D@C A?' GFA' F=E' @? ' F@' E@ D= F@ ¼' =?E' F@' DC@ @E' F@' @E AC' ?A ' A' > B@' =? ' 1 C F@C' ?1AC J= A?' F@C@' G= ' ?A' D@ ? =C ' ?E @ J @? ' 1AC' F@' = ;' I ' ' C= F@C' =DD@=C@E' F= ' F@' DC A?@C' IAC@' AJ@' C@ @? J @? ' A' F@' A A? = ' * ? @C' 1AC' F@' C@1 = ' A1' =?' =DDA ? J @? ' F@' @E AC' = @E' F= ' F@' A? ' AIZ@ ' 1AC' GF F' F@' E@ D= F@ ' G@C@' @? ' A' F J¼' = ' F@' ?E@C AAE¼' G= ' F= ' F@ ' J >F ' I@' D I F@E' ?' F@' !#= ' " @G H * =C ?¼' ¼' A E' F@' Z C ' F= ' F@' A11@? @' A? @E' ?' F@' =< ?>' =G= ' F@' DCAD@C ' A1' =?A F@C' G FA ' F ' A? @? ¼' =?E' G F' F@' ? @? A?' = ' F@' J @' A' A?B@C ' F= ' DCAD@C ' A' F@' @' A1' F@' =<@C ' F' EA J @? ' = ' F@ @' G@C@' @=C ' F@' IZ@ ' A1' =C @? ¼' =?E' = ' F@' @= ?>' A1' F@' D=D@C' @ 1'GA E' F=B@' I@@?' =' 1@ A? ¼' F@' 1= ' A1' F@' D=D@C' I@ ?>' DC ? @E' J =E@' ?A' E 11@C@? @$ =?E' F@' A? ' b @ A?' 1AC' F@' Z C ' G= ¼' GF@ F@C' F@' @B E@? @

W(H /1' G') J/=' +'' +" "' /+*? +' :' =/1' A' RNB' /)' ' !2:&(/#' E' ' ' AYH 12'& ' /=' 4* /' 14' 42' ')*+' : ' =2' 4* +4' 49/' 2(:' 3 ')/(' ' ' 2&&/' 1/' (/ ; + '=' +' &/*2 '# '' (/*+' :

@ =I F@E' A' F@ C' = 1= A?' F= ' = ' F@' J@' F@'DC A?@C' AA<'
F@' EA J@? ' =G= ' 1CA J' F@' A A? = ' 11 @%' F@' ? @?E@E' A'
E@DC B@' F= ' A11 @' A1' = ' DCAD@C ' ?' F@J%=?E' A?B@C ' F@J ' A'
F ' AG?' @ ' NRd

AA' ('

!E'
H*' < ' N " 4 6 ' Y$4# ' ! ' " E ' 4*'5<! <' < ' H* ' 4*' ` 6" ''
' '. &6 ' ' < ' 4&&! #

' AAE ' D=C ' A1' F@' 1C@@FA E%' D ' -
:' &C @?' ? C J@? %' D ' - .
' ? F= %' I CE 4' =?E' 1 F%' D ' -

6 'Y44# ' E6" ' 4*' <e' W" <4 #

7' F@' AJJA?' =G%' =C @? ' =??A ' I@' AJJ @E' A1' F?> ' GF F' =BA C' A1' F@' C@= %' =?E' =C@%' = ' F@' J@' F@ ' =C@' =<@?%' E6= ' 4*' < '*" <4 #G' GF@ F@C' F@ ' I@' A1' F@' I =? @' A1' F@' =?E%' = ' 6# ' AC' A F@C' J ?@C= ;' A1' F@' DCAE @@' A1' F@' =?E%' = ' C@@ %' AC?%' > != %' =DD @ %' AC' A F@C' 1C ' ;' AC' F ?> ' =11]@E' A' F@' =?E%' = ' I E ?> %' =?E' =C @ %' F' = ' @=E%' , ' =??@]@E' A' I E ?> %' 1'3' F@' @B@C=? @' =?E' =< ?>' A1' F ?> ' A1' F ' E@ !D A?' %' = ' AJJA?' =G%' A? ' =!' C@ D= ' ?@' C@= A?' 1AC' GF F' EA C ?@' N FA >F%' ' EA@ ' ?A ' =DD ' A' F@' GFA @' A1' F@' =C @ ' GF F' F=B@' I@@?' @? J@C= @Ed' ' = E' A' I@%' F= ' F ?> ' GF F' =C@' =' D=C ' A1' F@' 1C@@FA E%' I@ ?>' = ' JAC@' E 11 ' A' C@JAB@%' =C@' @ ' =I @' A' I@' A @?' $ N d' DA I ' = A%' F@' EA C ?@' J= ' F=B@' DCA @@E@E' DA?' @C = ?' I @ ' ?' F@' @>= ' ?A A? ' A1' A C' =? @ AC ;' 163' =?E' ' J= ' D@CF=D ' ?' AJ@' J@= C@' F=B@' AC > ?= @E' ?' F@' >C@= @C' @ C ' 1CAJ' DC B= @' E@DC@E= A? ' A1' F@' F ?> ' GF F' G@C@' D=C ' A1' F@' 1C@@FA E%' F=?' A1' FA @' GF F' G@C@' J@C@ ' D@C A?= %' ?' F@' @=C @C' J@ %' GF@?' =C @ ' A1' DCAT B A?' =?E' A F@C' D@C A?= ' F= @ ' N1C@b @? ' F@' JA ' B= =I @d' G@C@' =CC @E' 1CAJ' D = @' A' D = @' I ' F@' ?E B E = ' @?=? %' ?' F= ' = @?E=? @' ?' F@' =JD' GF F' G= ' @]= @E' I ' F@ C' JE =C ' @? C@ ' N d #49/' 12 ;P ;2'' *+7' '*+(P 1/ '# 1+' ' 24' 3/' 12 ; ; 44/ :' 2& 49 ')=49+4' +(/' "+(4' 2& 49/' &(//92*:

' F ?> %' FA >F' F@ ' =BA C' A1' F@' C@= %' J= ' I@ AJ@' F@' IZ@ ' A1' =C @? ' I ' I@ ?>' " #' 1CAJ' F@' 1C@@FA E$ F %' 1' A?@ ' I@' E >' A ' A1' =' b =CC %' GAAE' I@' %' 1C ' I@' >= F@C@E%' AC' >C= ' I@' %' =C @? ' J= ' I@' AJJ @E' A1' F@J%' 1 3' ?E' F ' G ' I@' F@' = @%' ?A ' A? ' GF@C@' F@ ' F=B@' I@@?' @B@C@E' I ' F@' AG?@C%' I ' = A' I ' F@' F @1' FZJ @ 1%' 1' F@C@' I@' =?' ? @CB= ' I@ G@@?' F ' @B@C ?>' =?E' =< ?>' F@J ' =G= ;' A' F= ' ' =??A ' I@' A? E@C@E' = ' A?@' A? ? @E' = ' 1' F@C@1AC@' F@' F @1' @B@C' F@J ' = ' A?@' J@%' GF@C@I ' F@' C@ D= ' ' AJD @ @E%' =?E' F@ ' =C@' A?B@C @E' ? A' D@C A?= ' F= @ ' ?' F@' A? C B@' DA @ A?' A1' F J ' A?' GFA @' A ' F@ ' =C@' @1 ' AC' = E%' =?E' AJ@' =>= ?' = <4 49/# 3/P 12 ; /' =<36/14=' 2& *+(1/ '# 3# 3/ ')' =/J ; (/ :

W3' /)' ' !</('=/#' .' L' ' L' HNI ' W1' .' +70' ' ' 1' HH' =' HI ' G' +=4'
W#' H' '=4' .MN' .' +*/' A.M' . ' ' 1' .Y' =' GD' "' AED']
+70' ' ' 1' HH' =' HI' +2' 3' 4 4' " B' I' *+1' 2 ; 'GHG
^ 5' W b' I' *+1' 2 ; ' GHG' G' +=4 " B' +/' 3' 4 4' ^ 5' W b
' ' 1' .Y' =' GD' "' A D " B' A' '=4' .MN' .' +*/' A.M

3 f'

=?A F@C' J @' GF@?' F@ '=C@' A' C?@E' ? A' D@C A?= '=?E' =<@' F@ J ' =G= %' ' '=C @? %' NEd' J %' FA >F' 7' 1' =' F @1' @B@C '=' ADD@C%' =?E' ? =? ' =CC @ ' ' A11%' ' ' ?A' 1@ A? ' = ' AJ JA?' =G ;' @ ' 1' F@' @ ' 'C@ J = ?%' =1 @C' ' ' @B@C@E%' =? ' J@%' F@?' F@' C@ J AB= ' A1' ' I@ AJ@ ' =' 1@ A? %%' 1' F@' AJ@ ' I= <' =?E' =<@ ' ';' =?E' A' A1' =' C@@' GF F' F= ' I@@?' AJ@' J@' @B@C@E H N@d

4+4<4/=' ; +0 ')' 4' K"/'+# 42' 4+0/' 7(2 ')&<**# 49 ')=' 49+4' =C@' "+(4' 2& 49/' &(//92*:

F ' I@ ?>' F@' AJ JA?' =G%' =?E' J =? ' A1' F@' E@ C D A? ' A1' DCAD@C ' GF F' AJ@' G F ?' F ' ?A A?' A1' =' A??@ A?' G F' F@' 1C@@FA E' I@ ?>' F@C@I ' D = @E' ?! =' B@C ' DC@ =C A ' =?E' ?DCAT @ @E' = A?%' F@' @> = C@' 1CA J' J @' A' 1J @' ? @C1@C@E' 1AC' F@ C' DCA @ A?%' =?E' J =E@' F@' GCA?>1 ' =< ?>' A1' F@ J' ?' AJ@' ? =? @ ' 1@ A? %' =?E' ?' A F@C ' =' J ?AC' A11@? @%' D ? F=I @' I ' J J =C ' DCA @@E ?> ' I@1AC@' =' J => C= @ ' F@ @' DCAB A? ' =C@' 1AC' Fp' J A ' D=C ' =J @?E@E' =?E' A? A E= @E' I ' F@' -:' ,' -8' 3 @%' '

(f' 2& ; /4+*' 12+*' 1

' @ ' 9%' 7' & FA A@B@C' F= ' @= %' AC' @B@C' G F' ? @?' A' @= %' F@' AC@' A1' =? ' J @ = %' AC' =? ' =D ' = =J ?=C %' CZ =?>=?@ @%' AC' J ?E <%' AC' =? ' G=E%' I = <' =G<@%' AC' I = <' @=E%' AC' =? ' A=' AC' =??@ ' A= %' 1CA J' =? ' J ?@%' I@E%' AC' B@ ?' F@C@A1' C@ D@ B@ %' F= ' I@' > ' A1' 1@ A? %' =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @%' = ' F@' E C@ A?' A1' F@' A C %' A' I@' JDC A?@E' 1AC' =? ' @C J' ?A ' @] @@E ?>%' GA' @=C %' G F' AC' G FA ' F=CE' =IA C%' =?E' G F' AC' G FA ' A =C ' A?1 ?@ J@? H N Md' %

/4+*')*+==' 722 :' 1' & V/ :' 42' 92<=/' 2(' *+' :

@ ' ' 7' & FA A@B@C' F= ' @= %' AC' F= 'C D%' %' "' AC' I C@=<' G F' ? @? ' A' @= %' =? ' > = ' AC' GAAE'GAC<' I@ A?> ?>' A' =? ' I E ?>' GF= A@B@C%' AC' =? ' @=E%' CA?%' ADD@C%' IC= %' AC' A F@C' J @ = %' AC' =? ' @? ' AC' 1] C@%' G F@ F@C' J =E@' A1' J @ = ' AC' A F@C' J = @C = ' AC' A1' I A F%' C@ D@ B@ '1]@E' ?' AC' A' =? ' I E ?>' GF= T A@B@C%' AC' =? ' F ?>' J =E@' A1' J @ = ' 1]@E' ?' =? '723' =?E' I@ ?>

" B' .' +7O' ' ' 1' HH' =' HI' I *+1' 2 ;' GHH' G' +=4' ' ' 1' .Y =' GD' "' AED' ' :'=2' '' .' +*/' A.M' 4' =' =+ :' 0 <4' &'+' ; + '' 12 ; /' 42' =4/+*4(//=' 2(' 4 */' */+ :' 2& +' 1* ' (1*' 2(' 92<=/' +' :' =/J/(' 4' +' :' +&4/(' +32<4 +'' 92<(S=4 ; /' '=2' 12 ; /' +' :' &/419' 4' +7+#' 49 =' 9+49' 3// '' 9/*:' &/*2 '#' 3/1+<=/' 49/' +1#' =' '24' 12 '4 '<+4/ :' 3<4' '4/(" 2*+4/ : ' +' :' '' 49+4' *4/(J+*' 49/' "(2"/(4# *2 :) /49' '' 49/' ( )94' 27 '/(' +=' +' 1* +44/*' K +' :' =2' 4' 7+=' +)(//:' 3# 49/' 2<(4' 2& ')S=' /'19' N +(' .' <"2 '+' ' : 14 ; /' 4' &2(' =4/+* ')' 49/' */+ :' 2& /=4 ; '=4/(' 33/# $ +*4' 1' .W.H' "' .YY' W' 7' / : 4' 1' .AY' "' AM.b' //' ' 27 '*/#' ' "' GHD

" B' /(' ! 33=' ' ' //' &' =: 2 ' ' D' +<' 4' .N. ' 9/ '' +' : / ; =/' 2& (/+* "(2"/(4# =' ; +: /' + '#' 49 ')' + ' '/V/ :' 42' 49/' &(//92*:' 12' 4 '</=' "+(4' 2& 49/' '9/(P 4+' 1' 2& 49/' *+' :*2(: ' +' :' 3/12 ; /=' "+(4' 2& +' 19+44/*' (/+*' '' 49/' 9+' :=' 2& 49/' 4/' +' 4' '' "2==/== 2 ' ' #' 49/' */+=/' 2(' +)(// ; /' 4' 49/' 4/' +' 4' 9+=' 49/' <=/' ' 24' 49/' :2 ; ' 2 ' ' 2& 49/' "(2"/(4# : / ; =/ : ' +' : ' 4* /(/&2(/' 79/ '' 9/' =/ "+(+4/=' +' '# "+(4' 2& 4' 42' 12' J/(4' 4' &(2 ;' +' 1* +44/*' (/+* 42' + 19+44/*' -"/(=2'+*' 9 =' ( )94' 2& <= ')' 4' =' +4' +'' /' :' &2(' +' '# */)+*' "<("2=/' 49+4' ( )94' 3/ ')' 2'' *#' 42' <=/' 4' '' 49/' =4+4/' '' 7* 19' 4' 7+=' 3/&2(/' +' :' '/(=2' 792' 9+=' +' ( )94' 42' 49/' &(=4 /=4+4/' 2& 'P 9/(4+' 1/' 9+=' +' ( )94' 42' 49/' ; ; /: +4/' "2==/== 2 '' 2& 49/' 49 ')' 49+4' 9+=' 3// '' =/J/(/ :' ''49/'* 0/' ; +' ' /(' +=' 9/' 9+=' 49/' ( )94' 42' 49/' ; ; / : +4/' "2==/== 2 '' 2' 4 ; P 3/(' 7: /(/' 4' =' =/JI/(/ :' &(2 ;' 49/' '9/(4' ' +' 1/' /(' 2*(2#: ' ' L+(&+' 4' +' 92 ; "=2' ' Y' ' ' : ' EGY' ' :' &' =4(+')/(' =/JI/(' +' "+(1/' 2& 49/' &(//92*:' :<(')' 49/' 4/(; ' 49/' "+(4' =2' =/JI/(/ :' ; P ; / : +4/*' J/=4=' ''49/' *+' :*2 :' &' 9/ 32 27 '/(' ''&//' / '#' X' /+(:' (2' +(' GIG' /(*+0/' : /' S' 1+=/' I' /"' YG' <4' &' 49/' *+' :*2(:' 9+=' 2' *#' +' /=4+4/' &2(' * &/ ' 49/' "(2"/(4# J/=4=' ' 49/' 27 '/(' 2& 49/' '9/(4+' 1/' /(' 2(:' /' #2' ' ! 2(:2 '' & ' +("/(' D' ' ' N' //' *+10/44' &' 27/=' G' ' ' ' INI' +=' 42' 4 ; 3/(' ;"(2"/(*# 1<4' 3# 1<=42 ; +(# 4/' +' 4=' J/=4 ')' ''49/' 2(:' 2& 49/' +' 2(' /' 2' 27 '*/#' ' "' GHD' "+(4 1<P *+(*# 49/' 6<:) ; / ' 4' 2& *+103<(' ' WwD' 9 =' 1*+<=/' =' 4+0/ ''&(2 ;' 49/' D' E' ! /2'):' ' GN' =' HD' ? +' :'N ! /2' I' 1' AA' =' HM' =' 42' 9+(:' +32<(' 1' =/' . y' A. ' J2*' . ' "" ' EM' E. " B' /' ' ' 19+(:=' ' ' ' GE' :/1 :/ :' <' : /(' 49/' (/"/+*/ :' 1' I' ! /2' G z' HG' 9/' 72(:=' 2& 49 =' 1' :' &&/(' &(2 ;' 49/' "(/=/ '4' 14

DC B= @' 'DCAD@C %' AC' 1AC' =' 1@? @' A' =? ' EG@ ?> FA @% >=CE@?%' AC' =C@=%' AC' ?' =? ' b =C@' 4"' C@@ %' 4"' ! ' =? D = @' E@E = @E' A'D I ' @' AC' AC?= J @? %' 4"' ! ' 6 ' ' <5 6 2"4> # ' 7<3 F= ' I@' > ' A1' 1@ A? %' =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @' A' I@' D ? F@E' = ' ?' F@' = @' A1' JD @' =C @? ' ;' N d' =?E' ?' F@' = @' A1' =? ' F' F ?>' 1]@E' ?' =? ' F' b =C@% C@@ %' AC' D = @' = ' =1AC@ = E% ' F= ' ?A ' I@' ?@ @ =C ' A' = @>@' F@' =J @' A' I@' F@' DCAD@C ' A1' =? ' D@C A? H N d' H

?' =' = @' DA ' F@' :' @A' -% ' -% =?E' - ' @A' % ' 9% GF@C@' F@' DC A?@C' G= ' E @E' 1AC' @= ?>' =' ! G ?EAG' = @ J @? ' J =E@' A1' CA?% @=E% =?E' > = %H F@' DCAD@C ' A1' F@' I@? F@C ' A1' F@' * EE @' @ J D @% 1]@E' A' =' @C = ?' I E ?>' = @' ?' J' A C % ' G= ' FA E@?' F= ' F@' = @' G= ' ?A ' G F ?' F@' ' F@' A C ' = E' F= ' F@' = @ ' = J A?> ' F@' @B@C= ' =C @ ' GF F' F@ '@? ? @ ' C= @E' E E' ?A ' J @? A?' ! 6' 6 & ' =?E' F= ' = ' F@' - ' @A' % ' 9% G= ' J =E@' A' C@ J @E ' F@' E@1@ ' A1' F@' :' @A% -% ' -% GF F' J @? A?@E' @B@C ' D@ 1 ' =C @' I ' ?= J @% F@' GACE ' 7=? ' ADD@C% IC= % I@ J @ = % @? % AC' 1] C@%H G@C@' A' I@' =<@?' = ' I =? B@' ?A ? % =?E' ?A ' = ' E@ C D A? ' A1' F@' AC ' A1' 1] C@ ' GF F' F@' @> = C@' ? @?E@E' A' DCA @ ' 1 3 F' =?' A11@? @7 FAG@B@C% GA E' I@' @=C ' G F ?' F@' DCAB A? ' A1' F@' C@ ?' = @! DA?' =?' ?E J @? ' DCAD@C ' 1C= J @E

& F@C@' F@' DC A?@C' G= ! ?E @E' A?' F@' :' @A' -% ' -% 1AC' @= ?>' GA' F ?EC@EG@ >F ' A1' @=E% 1]@E' A' =' FA @' =?E' I ET ?> % F@' 1= ' G@C@% F= ' F@' FA @' ?' b @ A?' I@ ?>' A' I@' @ % F@' DC A?@C% > B ?>' =' 1= @' E@ C D A?' A1' F ' = A?' ?' 1@' =?E' I ' D = @' A1' C@ E@? @% AI = ?@E' DA @ A?' A1' ' ?E@C' =' C@= ' 1AC' =' @= @' A1' ' 1AC' A?@' =?E' G@? ' @=C % GF F' G= ' =>C@@E' A' I@' @] @ @E' ; =?E% ?' =' 1@G' E= ' =1 @C' F@' F=E' A' AI = ?@E' DA @ A?' A1' % C DD@E' ' A1' F@' @=E' A?' F@' CAA1% =?E' A1' F@' @=E@?' D D@ % , ' F@' Z C ' = E' F= ' F@ ' G@C@' A1' AD ? A?' F= ' F@' F=E' @? @C@E' ? A' F@' A? C= ' 1AC' F@' D CDA @' A1' >@ ?>' =' 1C= E @? ' DA @ A?' A1' F@' FA @% =?E' 1A ?E' =' B@CE ' A1' > ';' =?E% DA?' =' = @' C@ @CB@E% FA >F' ?A' AD ? A?' G= ' D I ' E@ B@C@E% F@' DC A?@C' =1 @CG=CE ' G= ' @? @? @E ' 1 3

?' =?' ?E J @? ' ?E@C' F@' :' @A' -% ' -% F@' 1 C ' A ?' F=C>@E' F= ' F@' DC A?@C' 8 ' DA ?E ' G@ >F !A1' @=E' I @ A?> ?>' A' F@' (@B ' % F@?' =?E' F@C@' 1]@E' A' =' @C = ?' I E ?>% = @E' @?EA?' F C F' A1' F@' = E' % F@?' =?E' F@C@' E E' @= % ,

; +#' '2% 9/' * ; 4/ :' 42' +' "*+1/' * ' ,3 ' 7 49' =T<+(/' 2(=4(//4' 9/' 72(:=' 0 <' +' '# 3<(+*)(2<' :'$ +(/' +: : / :' 42' :2 +7+# 7 49' 49/' :2<34=' +=' 42' & V4<(/=' '' 19<(19#+(:='

%#$ /' 2(S' 1+=/' .' /+19' INY' G' +=4' ' ' 1' .Y' =' H.' "' ANH' '' /V ' /:)/=' .' /+19' GM.' G' ==4' ' M' 1' .Y' =' HM' "' ANM' '24/' WAb' 49/' T</=4 2'' +"" /+(=' 42' 9+J/' 4<(' / :' <"2'' 79/49/(' 49/' 7 ' :27' =+=9/=' =42*/'' 7/(/' 0 '42' 49/' &(//92*: ' 79 19' 7 +=' (<*/ :' '' 49/' ' /)+4 J/' <"2'' 49/' &+14=' 2& 49/' 1+=/' 79 19' =9/7/ :' 49+4' 49/# 7/(/' 2' *# +44+19/ :' 3# +' 5' &+=4/' f K"C$ < :+#S' 1+=/' G' /+19' EAM' G' +=4' ' ' 1' .Y' =' H.' "' ANI

2' =4(<14 2'' 2& 49/' =4+4<4/=

9/(/' 49/' "(=9' /(' 9+:' 234+ ' /:' &(+<[' :<*/ ' 4' Vb2=' =/== 2'' 2& +' 92<=/' <"2'' +'' +)(// ; / ' 4' &2(' +' */+=/' +' :' =4("" /:' 4' /&' 49/' */+: / '' " "/=' 1 ' 4' 7+=' 92*: / '' 42' 3/' 49 '' 49/' I' ! /2' G' /'

' /9<(19' 7+=' 9/*:' 42' 3/' +' 3< *: ') 7 49 '' 49/' I' ! /2' G' HG

WD$ 4' =// ; =' 49+4' =4/+* ')' & V4<(/=' 2<4' 2& +' 19<(19#+(:' 7+=' "<' =9+3*/' <' : /(' 49/' &2(; /(' / '+14 ; / '4' D' 'E ! /2' I' 1' GN' =' II' ' J' * 10' I' ' ' ' HDD' 2=+ 'T</4' ' ' &' 2' /=' ! *2<1/=4/(' 6 (')' ==' . EGE' ' ' ! ' ' &' 2' /=' ' ' ! ' ' AYA' //' +J =$' 1+=/' G' +=4' ' ' 1' .Y' =' H.' "' ANH

R B' J .' "' .GI

"*B' 9 =' 1*+<=/' =' 4+O/ '' &(2 ;' 49/' D' ' E ! /2' I' 1' GN' =' II' +' :' 49/' N ! /2' I' 1' YA' =' HD' W b' 9/' 72(:' 0=/J/($ =' +: : / :' '' 2(: /(' 42' '1*<: /' 1+=/' =' 79/(/' 49/' 2 &/ ' : /(' : 2/=' '2& ("' 1<4 2(' 3(/+O ?$ 1 # ' 79/(/' +' & V4<(/' =' <' =1(/ 7/ : ' 9/' 72(:' 2& 49/' &2(; /(' / '+14 ; / '4=' 7/(/' 0=T<+(/' =4(//4' 2(' "*+1/ $ 1' ? 49/# 9+J/' 3// '' +*4/(/ :' =2' 49+4' 0"*+1/S

D' -

+’ :’+’’ ’ : 14P ; / ’4 &2(’ =4/+*P)’*/+:’ R +&& V/ :’ 42’ 4 ’ ’/ / :’ ’24’ =4+4/’ 42’ =92 ’’ 49/’ */+:’ 3/*2’) / :

F@’ @ A?E’ A ? ’ = @E’ F@’ DCAD@C ’ = ’ I@ A?> ?>’ A’ F@’ F C FT G=CE@? ’ I ’ ?= J @%’ =?E’ = ’1]@E’ A’ =’ @C = ?’ A F@C’ I E ?>% = @E’ @?EA?’ F C F%’ A1’ F@’ = E’ F C FG=CE@? ’$ DA?’ =’ = @’ C@ @CB@E%’ F@’ Z E>@ ’ G@C@’ ?=? J A ’ F= ’ =’ F C F’ G= ’ ? E@E’ G F ?’ F@’ GA !E %’ 7=? ’ I E ?>’ GF= A@B@C H ?E’ C@>=CE ?>’ F@’ D@C A?’ AC’ D@C A? ’ ?’ GFA J ’ F@’ DCAD@C ’AC’ F@’ 1C@@FA E’ A1’ F@’ F C F’ I ’ =G’ C@ E@ %’ =’ J =ZAC ’A1’ F@’ Z E>@ ’ G@C@’ A1’ AD ? A?% F= ’ F@’ 1 C ’ A ? ’ F=C> ?>’ F= ’ F@’ @=E’ G= ’ A @?’ 1CA J ’ F@’ D=C F’ F C F’ A1’ @?EA?% =?E’ = ?>’ ’ A’ I@’ F@’ DCAD@C ’A1’ F@’ B =C% G= ’ 11 T @? ’ A’ DDAC ’ F ’ ?E J @? ’ ’G= ’ = A’ FA >F ’ I ’ J =? ’A1’ F@’Z E>@ %’ F= ’ = ’ F ’ = @’ F=E’ J =E@’ F@’ @= ?>’ @=E’ 1CAJ’ =? ’ I E ?>’ =’ 1@ A? %’ F@’ =B@C J @? ’ F= ’ F@’ @=E’ G= ’ A @?’ 1CAJ’ =’ @C = ?’ I E ?>’ = @E’ @?EA?’ F C F%’ G= ’ A1’ @ 1’ =’ E@ C DT A?’ A1’ 11 @? ’ @C = ? %’ =?E’ F= ’ F@’ 1 C F@C’ =B@C J @? ’ ?’ GFA J’ F@’ DCAD@C ’C@ E@E’ G= ’ J J = @C = ’ =?E’ ?? @ @ =C ’ ;’ F@’ = @>=T A?’ F= ’ ’ G= ’ =11]@E’ A’ =’ I E ?>% E@ C I ?>’ F@’ AC ’ A1’ I E ?>% =?E’ F= ’ F@’ I E ?>% GF@ F@C’ F C F’ AC’FA @% I@ A?>@E’ A’ F’ =’ D@C A?% I@ ?>’ = ’ F= ’ F@’ =G’ ?’ F’ =’ = @’ C@b C@E’ ; =?E’ F= ’ F@’ = @>= A?’ = ’ A’ F@’ DCAD@C ’ J >F ’ I@’ C@Z@ @E’ = ’ CD =>@% NJ d

< *: ’)=’ 7 49 ’’49/’ =4+4<4/

’ J J @C FA @%’ @E’ A = A?= ’ 1AC’ @=’ =?E’ C@1C@ F J @? % = @’ ?’ =’ D=C<% = ’ F@’ E =? @’ A1’ F= 1’ =’ J @’ 1CA J’ F@’ EG@ ?> ’ FA @% G= ’ F@ E’ A’ I@’ =’ I E ?>’ G F ?’ F@’ :’ @A’ -% ’ -’ N?d DA?’ =?’ ?E J @? ’ 1AC’ @= ?>’ G!A’ D @ @ ’ D1’ GAAE’ 1]@E’ A’ =’ @C = ?’ I E ?>% ’ =DD@=C@E’ F= ’ F@’ D = @’ G= ’ ? @?E@E’ 1AC’ =’ =C F@E’ ?’ =’ 1 @ E% =?E’ F= ’ A?’ = ’ ’ ’ E@ ’ ’G= ’ IA=CE@E’ D% @] @D ’ GF@C@’ F@C@’ G= ’ =’ EAAC’ GF F’ F=E’ =’ A <’ A?’ ’ ;’ ’ F=E’ =’ GAAE@?’ 1C= J @ GAC<’ 1AC’ =’ CAA1’ C@=E ’ 1AC’ F= F ?>% I ’ ’ F=E’ ?A’ F= F% AJ @’ >AC @’ I@ ?>’ FCAG?’ A?’ ’ ;’ =?E’ @E= @% % F@ E’ F= ’ F ’G= ’ =’ I E ?>’ G F ?’ F@’ . ’ ,’ 9 ! pA’ :% ’ - % ’ : : ’ NAd ’ GF@C@’ A?’ =’ J =C’ ?E J @? ’ 1AC’ @= ?>’ =’ D =?<’ ’ =DT D@=C@E’ F= ’ F@’ D =?<’ G= ’ @E’ = ’ =’ @= ’ ?’ F@’ >CA ?E ’ A1’ F@’ # <@’ A1’ @= 1AC % =?E’ F= ’ F@C@’ G= ’ =’ G= % =?E’ D =C@’ = ’ F@’ @?E’ A ’ % =?E’ F= ’ F@’ D =?<’ G= ’ = E’ ?’ J AC =C’ A?’ F@’ AD’ A1’ F@’ G= ’ =?E’ D =C % =?E’ F@C@’ G= ’ ?A’ CAA1’ ;’ 5=C<% ’ ’ % F@ E’ F= ’ F ’ GJ ’ ?A ’ =’ I E ?>’ G F ?’ F@’ J @=? ?>’ A1’ F@’ ’ NDd ?’ ?E J @? ’ ?E@C’ F@’ .’ ,’ 9’ @A’ :% ’ - % ’ : : % = @>@E’ F= ’ F@’ DC A?@C’ A @’ @C = ?’ @=E’ 7 F@?’ I@ ?>’ 1]@E’ A’ =’ @C = ?’ GF=C1%H =?E’ ’ =DD@=C@E’ F= ’ F@’ @=E’ A @?’ 1AC J @E’ F@’ > @C ’ A1’ GA’ F@E ’ A?’ =’ GF=C1’ A1’ F@’ DCA @ AC’ ;’ GF F’ F@E ’ G@C@’ A?T C @E’ A1’ I C <% J I@C’ =?E’ @ % G F’ @=E’ > @C ’ ’ G= ’ A?T @?E@E’ F= ’ F@’ ?E J @? ’ G= ’ I=E% = ’ F@’ GACE7GF=C1H E E’ ?A ’ ?@ @ =C ’ J D ’ =’ I E ?>’ ;’ =?E’ @ A?E % F= ’ F@C@’ G= ’ =’ B=C T =? @% 1AC’ F@’ ?E J @? ’ = @>@E’ F= !’ F@’ @=E’ G= ’ 1]@E’ A’ =’ GF=C1% =?E’ F@’ DCAA1’ G= ’ F= ’ ’ GJ ’ 1]@E’ A’ =’ F@E’ ;’ I ’ ’ G= ’ F@ E% A?

9+4’ =’ +’ =<&& 1 / ’4’ : /P =1(’’4 2 ’’ 2&’ +’ 3< *: ’)’ ’’ 49/’ ’ : 14 ; / ’4

R B’ /V’ 10 ; + ’ ’ ’ /+1* ’ ACh.’ ’ ’ G’ +=4’ ’ ’ 1’ .Y’ + ’ ’’ ANH’ ’ ’**/(’ ’ 492<) 94’ 49+4’ 19+() ’)’ 49/’ */+:’ 42’ 9/’ ’’(2’’/(4# 7+=’ +3=<(:’ +’ :’ (/P ’’<) ’ +’ 4’ ? ’’(2’’/(4# ’’ 49 =’ (/=’’/1’4 3/ ’)’ 2 ’ *# +’’’* 1+3*/’ 42’ ’’/(=2 ’+* 49 ’)=’ + ’ :’ 49+4’ 4- 92<*:’ 2 ’ *# 3/’ 19+()/ :’ 42’ 3/’ */+:’ +&& V/ :’ 42’ 49/’ 19<(19’ 2(’ 42’ +’ 92<=/’ 3/P *2 ’) ’)’ 42’ =<19’ +’ ’’/(=2 ’ ’ /’ /V’ &’ =*/# ’ ’ /+19’ HGM’ ’ 24/’ W]x’ ’ ’ ’ +’ ’’(/J 2<=’ /+=/’ 4’ 9+:’ 3/ / ’’ 9/ * :’ 49 +4’ */+:’ +&& V/ :’ 42’ +’ 19<(19’ 12<*:’ ’ 2’ 9/’ *+ :’ +=’ 49/’ ’’(2’’/(4# / 49/ (’ 2’ 49/’ 19<(197+(: / ’=’ 2(’ 2’ 49/’ ’ 9+3 4+’ 4=’ +’ :’ ’’+(=9 2 ’ /(=’ /V(’ +40/(’ G’ +=4’ ’ ’ 1’ .Y’ =’ H. ’ ’’ ANG’ ’’ B’ /V’ X’ 2((=’ ’ ’ ’ YN ’’ B’ /V’ b’ 2((+**’ D’ ’ ’ ’ A.Y ’’ B’ /V’ ’ 1/1/’ 2 ’ ; 2<49’ / ’4 ==’ .EGE’ ’ ’ !

= @ C@ @CB@E F= > @?A >F 1 F@ ?E J @? = @>@ F= F@ @=E 1]@E A F= GF F J = I@ = I E ?> =?E GF F DCAB@E I F@ @B E@? @ A I@A?@ F@ = @>= A? F= F@ @=E G= 1]@E A = GF=C1 G FA = ?> F= F@ GF= 1 = I E ?> J DA @ F= I CE@?A1 DCAA1 A? F@ DCA @ AC ; I F@C@ 11 T @? @B E@? @ F@C@ A FAG F= F= G!F F F@ @=E G= =11]@E A G= ? 1= = I E ?> F@ @B E@? @ J I@1= C =<@? A FAG F= F@ F@E 1CA J GF F F@ @=E G= A @? G= D=C =?E D=C @ A1 F@ GF=1 @ 1 N>d

?= ? ?E J @? 1AC @= ?> @=E 1]@E A F@ EG@ ?> FA @ A1 & AAE = G ?@ DCAB@E F= F@ ? =?=>@E F@ DCAD@C 1CA J GF F F@ @=E G= A @? 1AC F ?@DF@G & AAE ; F= F@ ACE@C@E = I C@D= C C@ @ B@E F@ H@? ? F ?@DF@G H =I @? @ =?E @ F@ DCAD@C A F@ DC@ @? @ ? =? ; =?E DA? = = @ C@ @CB@E G= F@ E F= F G= 11 @? @B E@? @ F= F@ IA @ I@ A?>@E A & AAE @ G= ? DA @ ? = F@ C@ @ B@E F@ C@? =?E @J D A @E =?A F@C D@C A? A @ =?E F@ A? C= A?= ?1@C@? @ 1CA J F@ @ 1= G= F= F@ FA @ G= F NCd

A ? 1AC @= ?> @=E 1]@E A = D=C F F C F = E F@ DCAD@C ? F@ B = @ =?E G= A I Z@ @E F= F@ @=E G= @ F@C F@ DCAD@C A1 F@ C@ AC AC F C FG=CE@? ; I E@C A? F@ E F= G= C >F = E ? F@ B = C N d

@ = @ EA@ ?A J =<@ F@ A11@? @ A1 @= ?> 1] C@ = =C @? =?E A? @b @? DA? =? ?E J @? 1AC @= ?> 1] C@ F@ DC A?@C =??A I@ A?B @E A1 = =C @? 1 = DD@=C F= = F@ J @ F@ AA F@ 1] C@ F@ F=E I@@? @B@C@E 1CA J F@ I E ?> N d

A = A 1 = D@C A?@= 1] C@ ? A?@ A ? =?E =CC F@ J ? A =?A F@C A ? F@ =??A I@ ?E @E 1AC J D @ =C @? ? F@ A ? ? A GF F F@ =CC @ F@ J N d

?= = I @b @? F=D @C F@ DCAB A? C@ = ?> A @= ?> F= @ =?E 1] C@ @ A @?=? =?E AE>@C G I@ 1A ?E F@ - : , -8 3 @ -7GFA A@B@C F= @= AC F= IC@=< CAA D AC A F@CG @ E@ y?vH AC E= J =>@ G F ? @? A @= F@ GFA @ AC =? D=C A1 =? C@@ =D ?> AC gZC I AC =? ?E@CGAAE C@ D@ B@ >CAG ?> ? =? D=C<
D @= C@ >CA ?E >=CE@? AC F=CE AC =B@? @ AC ?= =? >CA ?E =ET ZA ? ?> AC I@ A?> ?> A =? EG@ ?> FA @ F= N ?= = u F@ B= @ A1 F@ =C @ AC =C @ A @? AC F@ = J A ? A1 F ?= ?Z C EA?@ F= @] @@E F@ J A1 A?@ DA ?E d I@ > A1 1@ A? =?E I@ ?> A?B @E F@C@A1 F= I@ = I @ A I@ D ? F@E = ? ?= F@ = @ A1 J D @ =C @? ; 1 3 =?E GFA A@B@C F= @= AC F= IC@=< CAA D AC A F@CG @ E@ CA AC E= J =>@ G F ? @? A @= F@ GFA @ AC =? D=C A1 =? C@@ =D ?> AC FC I AC =? ?E@CGAAE C@ D@ B@ >CAG ?> @ @GF@C@ F=?= ?=? A1 F@ = A? ? ?= F

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2& 49+4 12<'4 /1 /V & 10 ; + ' .' "' G.G ' + ' :' +*=2 49/ /+(220 D : ' I ' " ' . ' " ' .I ' 1 4/ :'+ ;] ' " ' AY WM /) ! 2219 E GNH " B /) **+(' D YYA /49 = 1+=/ WXD 9 = 1*+<=/ = 4+0/ ' &(2 ;' 49/ D E ! /2 I ' 1 GN ='S HE ' + ' :' N ! /2 ' I 1 AA ' = H. W b = 42 49/ "< ' =9 ; / '4 =// .' "' .GI

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3"2 '' + '' 'P : 14 ; / '4 &2(=4/+* ')' & VP 4<(/=' 49/ "(=2 ' /(1+ ' ' 24 3/ 12 ' J 14/ :' 2 & ' *+(1/ '#

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@ A?' I @1AC@' J @? A?@E%' F= ' N ?' = @' F@' B= @' A1' F@' =C @' AC' =C @ ' A @?%' AC' F@' = J A ? ' A1' F@' ?Z C ' EA?@%' F= ' @] @@E' F@' J ' A1' 1 B@' DA ?E d%' I@' > ' A1' 1@ A? %' =?E' I @ ?>' A?B @E' F@C@A1' F= ' I@' =I @' A' I @' D ? F@E' = ' ?' F@' = @' A1' JD @' =C @? H NGd

/+' ')' 2&' 49/' 4/(;=' 04(//= S '0+:62 ' ')$ 0)+(:/' S

F@' DC A?@C' G= ' ?E @E' ?E@C' F@' C@D@= @E' = %' .' ,' 9' pA' :% ' - %' ' 9%' 1AC' @= ?>' D@=C C@@ ' A1' F@' B= @' A1' J AC@' F=?' /% E@ C I@E' ?' A?@' A ? ' = ' >CAG ?>' ?' =' >=CE@?%' =?E' ?' =?A F@C' =' ?' >CA ?E' =EZA ? ?>' A' =' EG@ ?> FA @%' =?E' ' DD@=C@E' F= ' F@' EG@ ?> FA @' G= ' A D @E' I ' =' @?=? ' A1' F@' DCA @ AC%' =?E' F= ' =' D=B@E' @? C ' AC' G= <' A1' =I A ' =' =CE' ?' G E F' C=?' = A?>' F@' I= <' A1' F@' FA @' =?E' G= ' 1@? @E' A?' F@' ADDA @' E@' I ' =' AG' D= ?>%' G F' =' G <@ ' >= @' ?' F@' @? C@%' GF F' AD@?@E' A?' =?' ?T 1@? @E' >C=B@ ' G= <' C ?? ?>' = ' C >F ' =?> @ ' A' F@' @? C ' EAG?' F@' J EE @' A1' =' D A ' A1' @? A @E' > !A ?E' A1' = I A ' F= 1' =?' = C@ ' F@' >CA ?E' A?' A?@' E@' A1' F ' G= <' G= ' A D @E' I ' F@' @?=? ' = ' F ' >=CE@?' ;' F@' A F@C' E@ G= ' F@' >CA ?E' A?' GF F' F@' D@=C ' C@@ ' G@C@' >CAG ?>%' =?E G= ' C@ = ?@E' I ' F@' DCA @ AC' ?' F ' AG?' A D= A?' F@' C@@ ' G@C@' >C=1 @E' @@E ?> ' = I A ' @B@?' 1@@' F >F%' =?E' ? @?E@E' 1AC' = @' F@C@' G@C@' =' 1@G' CC=? ' =?E' C= D' I@? ' I F@ ' A?' F@' = J @' D=C ' A1' F@' >CA ?E%' =?E' ?' F@' DC@ @E ?>' J J @C' F@' DCA @ AC' F=E' F=E' =' CAD' A1' DA = A@ ' =?E' =II=>@ ' >CAG ?>' = J A?>' F@' D@=C C@@ ' ' G= ' F@ E' 1 C %' F= ' F@' =?E' G= ' ?A ' =EZA ? ?>' A' F@' FA @' ;' 1AC' >CA ?E' =??A ' I@' DCAD@C ' = E' A' =EZA ?' =' FA @' ? @ ' ' ' =I A @ ' A? > A %' G FA ' =? F ?>' I@ G@@?' F@ J ' $ @ A?E %' F= ' F '' D@=C C@@ ' G@C@' C@@ ' G F ?' F ' @ A?%' =?E' ?A ' TD =? ' H G F ?' @ A?' : -' ;' F CE %' F= ' ' G= ' =' b @ A?' 1AC' F@' Z C ' GF@ F@C' F@' D = @' G= ' =' >=CE@?' AC' ?A ' $ 753' =?E' 1A C F %' F= ' F@' GA HE ' 7=EZA ? ?>' AC' I@ A?> ?>' A H A? C@1@CC@E' A' F@' GACE' !>CA ?E%H =?E' ?A ' A' 7D=C<%' D @= C@ ' >CA ?E%' >=CE@?%' AC F=CE%' AC' =B@? @ H 7?3

9/' + ; 2<' 4 2& '6<(#' =' 12' ' & ' /' 42' 49+4' :2 /' 42' 49/' 4(//=

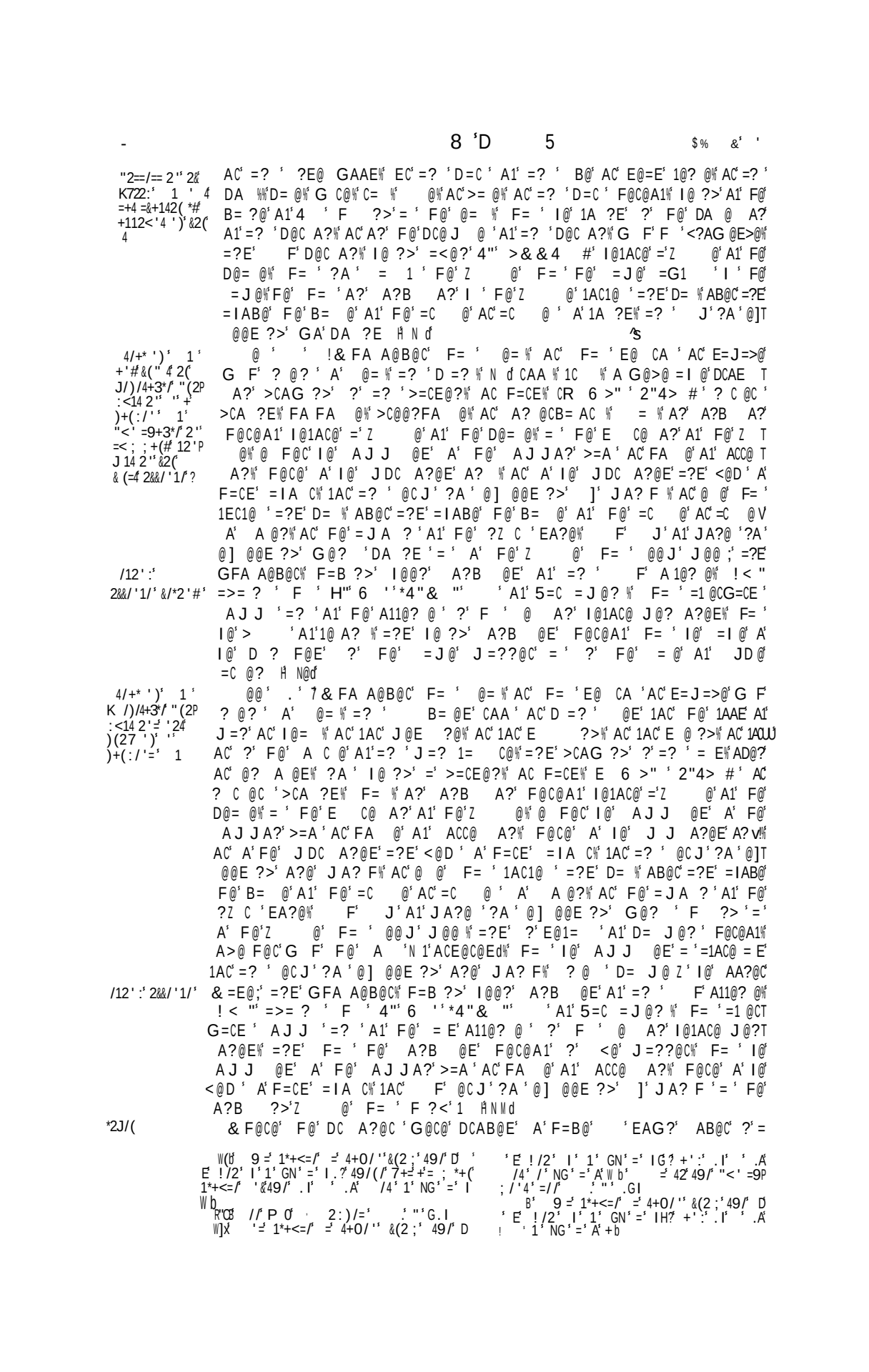
DA?' =?' ?E J @? ' A?' F@' .' ,' 9' @A ' :% ' % ' % 1AC' 1@ A? T A ' =?E' J = A ' E= J => ?>' A?@' = F%' A?@ ' @ J%' =?E' =' F ?EC@E' FAC?' FC I >CAG ?>' ?' =' F@E>@%' F@C@ I ' EA ?>' ?Z C ' A' =?' = J A ?' @] @@E ?>' i 8%' =' GAC?' B= @C' DCAB@E' F= ' ' GA E' I@' ?@ @ =C ' A' I' D' F@' A E' F@E>@%' =?E' @ J = @E' F@' ?Z C ' A' F@' C@@ ' = ' i %' =?E' F@' @] D@? @' A1' II ?>%' DA ' =?E' C= ' A' DCA @ ' F@' ?@G' F@E>@%' b <GAAE%' @ ?>%' =?E' @=C ?>' = ' i :' : ' I#' ;' G= ' A I Z@ @E' F= ' F@' ?Z C ' J ' I@' ?' C@ D@ ' A1' =' >CAG ?>' C@@%' =D ?>%' AC' ?E@CGAAE%' =?E' F= ' F@C@' G= ' ?A' @B T E@? @' A1' F' ?Z C ' I@ A?E' A?@' DA ?E' ;' =?E%' A?' =' = @' C@ @CB@E%' ' G= ' F@ E' F= ' F@' = J A ? ' A1' ?Z C ' J ' I@' A?1 ?@E' A' F@' ?Z C ' EA?u' A' F@' C@@ %' =?E' F= ' F@' A? @b @? = ' ?Z C ' =??A ' I@' =<@?%' ? A' A? E@C= A?%' 7 '3

"&&B' 9 =' 1*+<=/' =' 4+0/ '' &(/ '' 49/' ' ' E' ! /2' . ' 1' GN' =' HE' + ' :' N ! /2' I ' 1' AA' =' H.' W b' =' 42' 49/' "<' =9 ; / '4' =/ /' ' " ' G I RNB' /V' ' 2 :)/=' ' ' ' HI . ' +(0/' ' +' :' +(0' ' ' ' Q ' 79/49/(' 4' 1+'' 3/' =+ :' 49+4')(2<' :' 0+ :P 62 '=' 2(3/*2')=' 42$ +' : 7/** ') 92<=/' 7 49 '' 4 =' 14' < ' */=-' 4' 9/' 211<" /:' 3# 49/' =+ ; /' "/(=2'' 792' 211<" /=' 49/' : 7/**P ') 92<=/' ' ' ! W+B' ' ' ' ' ' ! ' '' /V &

+#*2(' ' ' ' HDH' 4' 7+=' 9/*:' 49+4' K#2< ')' +"" *' +' :' "/+(' 4(//=' &(2 ;' &2<(' 42' = V' &//4' 9)9' ''49/' =4/ ;' 7 492<4' 49/' 42"' +' :' 79 19' 9+:' 3// '')(+&4/ :' +' :' "*+' 4/ :' '' 2(:/(' 42' =/** 49/' &(< 4' 79 19' 49/# ;)9 4' "(2:<1/' 7/(' 4(//=' 7 49 '' 49/' N ! /2' . ' 1' GG' =' . ' '27' (/"/+*/:' //' +((/# &' /7 ;+' ' .Y ' ' YIA' 49+4' +'' ' &2(;+4 2'' 2'' 49/' D' 'E' ! /2' I ' 1' GN' =' HN' ;)9 4' 3/' *+ :' 3# +' '# "/(=2' W#B' /) ' 9 4/ ; +' ' /+(=' ' ' HYH' 4' ; +# 7/** 3/' :2<34/ :' 79/49/(

DA?=?? E J@?1AC ?>@>F C@@ G F ? @?A @=GF@C@I =?=JA ?1 ?Z C G=EA?@ A F@J]@@E ?>i8 1C=J@E DA?? F@= @C D=C A1 F@ -:,-8 3@ -DCAA1 F=F@ =>>C@>=@B= @A1=?JI@C A1 C@@ =?A?@ J@ @]@@E@E F@=JA ?A1i8G =1F@?E J@? FA >F?A A?@C@@G=A1 F@B= @A1i8183

F@ -:,-8 3@ 7GFA A@B@C F= @=AC F= 4/+* ')4(//=' =9 <3=' 1 I C@=<CAA D AC A F@CEB @E@ CA AC E=J=>@G F ?@?A @=F@GFA@ A1=? D=C A1=? C@@ =D ?>AC FC I AC=? 79/(/=2/ /( )(27 ')+:2& ?E@CGAAE GF@C@ A@B@C F@ =J@ J=F@C@ D@ B@ >CAG ?> +'#J+<p +32J/ ='<' =9+3*/2' F@ @=?>A1 C@F=C @AC=C @AC F@?Z C EA?@I@?>A =<;;+(#12'P F@ =JA ?A1=' F ?>= F@ @= F= A?A?B A?F@C@A1 J 14 2'' &2(I@1AC@ =Z @A1 F@ D@= @1AC1@ =?E D= AB@C =?E =IAB@ F@ & (=4+':=/P B= @A1 F@=C @RAC=C @ A @?AC F@=JA ?A1 F@ ?Z C 12':2&&/'1/? EA?@ F J A1 JA?@ ?A @] @@E ?>1B@ DA ?E = A F@'Z T 49 (:2&&/'1/' @ F= @@J J@@ ;=?E GFA A@B@C F=B ?>I@@?A?B @E A1=? &/*2'# F A11@? @ !<"=>=?F AC6 '*4"& " A1 5=C =J@? F=1@CG=CE AJJ =?A1 F@ =E A11@? @?F=1@CG=CE AJJ =?A1 F@ =E A11@? @?I@1AC@ J@? A?@E=?E F= I@ A?B @E F@C@A1 F= I@ =I@ A I@D ? F@E ?F@ =J@ J=??@C=?F@ =@A1 JD@ =C@? 163 /12':2&P &/'1/ @ :7&FA A@B@C F= @=AC F= IC@=<AC FCAG 4/+* ')1 EAG?G F ?@?A @=?='D=C A1=? B@AC E@=E1@?@AC =?GAAE@?DA D=@5!" AC C= @ D AC @E= ='1@?@AC =? @AC>=@AC=?'D=C F@C@A1 C@ D@ B@ F= A?A?B T A?F@C@A1 I@1AC@ =Z @A1 F@ D@= @1AC1@ =?E D= AB@C =?E =IAB@ F@ B= @A1 F@ =C @AC=C @A @?AC F@=JA ?A1 F@ ?Z C EA?@ F J A1 JA?@ ?A @] @@E ?>1B@ DA ?E =A F@Z @F= @@J J@@ ;=?E GFA A@B@C F=B ?>I@@?A?B @E A1=? F A11@? @ !<"=>=?F AC6 '*4"& " A1 5=C =J@? F=1@CG=CE AJJ =?A1 F@ =E A11@? @?I@1AC@ J@? A?@E=?E F= I@ A?B @E F@C@A1 ?F@ =J@ J=??@C F= I@ AJJ @E A F@ AJJA?>=A AC FA @A1 ACC@ A?F@C@A I@ <@D A F=CE =IA C1AC F @CJ ?A @] @@E ?>G@B@ JA?F =F@ A?B ?>Z @F= F?< 1 ;=?E GFA A@B@C F=B ?>I@@?G @A?B @E A1=? F A11@? @ 15<<"':4<4"!<"4*>< 4 !!4 <6 <6 6 E6 9(:2&&/'1/ :*4" 4"6* "<E6 !2 4*<!B 3 F=1@CG=CE AJJ =?A1 F@ A11@? @?I@1AC@ J@? A?@E F=I@> YA1 1@A? =?E=?E I@?>A?B @E F@C@A1 F= I@ =I@A I@D ? F@E ?F@ =J@ J=??@C=?F@ =@A1 JD@ =C@? 163 /12':2&&/'1/: @ :7&FA A@B@C F= @=AC F= IC@=<AC FCAG 4/+* ')1 EAG?G F ?@?A @=?='D=C A1=? B@AC E@=E1@?@AC =?GAAE@?DA D=@5!" AC C= @ D AC @E= ='1@?@AC =? @AC>=@AC=?'D=C F@C@A1 C@ D@ B@ F= A?A?B T A?F@C@A1 I@1AC@ =Z @A1 F@ D@= @1AC1@ =?E D= AB@C =?E =IAB@ F@ B= @A1 F@ =C @AC=C @A @?AC F@=JA ?A1 F@ ?Z C EA?@ F J A1 JA?@ ?A @] @@E ?>1B@ DA ?E =A F@Z @F= @@J J@@ ;=?E GFA A@B@C F=B ?>I@@?A?B @E A1=? F A11@? @ !<"=>=?F AC6 '*4"& " A1 5=C =J@? F=1@CG=CE AJJ =?A1 F@ =E A11@? @?I@1AC@ J@? A?@E=?E F= I@ A?B @E F@C@A1 ?F@ =J@ J=??@C F= I@ AJJ @E A F@ AJJA?>=A AC FA @A1 ACC@ A?F@C@A I@ <@D A F=CE =IA C1AC F @CJ ?A @] @@E ?>G@B@ JA?F =F@ A?B ?>Z @F= F?< 1 :3 @ 8 7 1F@GFA @AC=?'D=C A1=? @@=D ?>AC FC I <="/14/:"/(=2'=' 49/#492('=''+9/:)/+(/*(9=?+':'&49/#7/(/'=4**49/#72<*:'12;/'7 49''=/1'HI'2&49/+(1/'#14' W2d4'9/"9/(:'HD'''''IA' 9/(/#<:)/+4#49/'4(+**/&#49/'1+=/'42'49/'6<(#':(/14')49/;'4*-+4''2(:/(42'12'P J14'49/'"(=2'/('49/#;<=4#9/'=+4=&/:'49+4'3/'1<4':27''+4'2'/'4;/'2(=2'12'P 4'<2<=*#+=42'&2(;'2'/'4(+'=+142'=<19+''<;3/(2&49/'4(//=+=72<*:';+0/' 49/'6<(#:2'/'+;2<'4'42'=<;'/V1//:P ')'d2'+':'49/':(/142''7+=9/*:'42'3/ ()94'/'&'**+;='+':'&'92;+'' "B9=1*+<=/'=4+0/''&(2;'49/'D 'E!/2'I'1'GN'='HN'9/(/'7+=+ =;*+(1*+<=/''49/'.I'C-'/4'1'NG' ='A W b'=42'49/''<'=9;/'4'=/'f'.GI "B9=1*+<=/'=4+0/''&(2'4 49/'G 'E!/2'I'1'GN'='IM?'49h#/'7+=+ =;*+(1*+<=/''49/'.I'.A'24'1'NG' ='A W b



=?E' @ >F F' A ? ' G@C@' J =C' A' F@ 1 C %' @ A?E%' F CE%' =?E' 1A C F' A ? %' IB ' E@ C I@E' F@' DCAD@C ' A @?' = ' A?@' CA ' A1' D=C FJ @? ' F@' 1= ' A' DCAB@' F@' @= ?>' G@C@' @=C%' =?E' F@'Z ' 1A ?E' F@' DC A?@C' > 'A?' F@' 1 C ' 1A C' A ? ' 6?AG %' 6%' G= ' @=C ' A1' AD ? A?' F= ' F@' C J @' A1' =C @? ' = ' AJ JA?' =PB' A E' ?A ' I@' @ =I F@E' A?' F@' 1A C' = ' A ? %' F=C> ?>' F@' F ?>' A @?' A' I@' J @C@' D=C FJ @? 'A1' F@' B= @' A1' @?' F ?> ;' =?E' F@' @? @C = ?@E' B@C ' CA?>' EA I ' GF@ F@ ' =?' = = ' @] ?>' C@ ACE' A1' F@' A C ' = ' & @ J ? @C' A E' DCAD@C ' F@' E@ C I@E' = ' J@C@' D= H FJ @? %' A' = A' F=?>@' ' = = ' @' =?E' ?E C@%' =?E' C@E @' ' A' J @C@' D@C A?= ' F= @ %' F@' IZ@ ' A1' =C @? ' = ' AJ JA?' =G'$ =?E' F@' IJ @E' F= ' F@' @= ?>' A1' =' C@ ACE' A1' F@' A C' =' & @ J ? @C' G= ' A? ' =' J E@J @=?AC%' =?E' ?A' 1@ A? %X ' F@' 9' @? ' %' ' -%' =?E' F= ' A? ' ?' F' = @ ' GF@C@' F@' Z E>J @?' G= ' =I @' A' I@' C@B@C @E' I ' F' F@1 ' ?' : "P ' 6 ' ?@ F@C' F@' AJ J A?' ?AC' F@' C@ C?' A E' F@' @>= ' A? E@C@E' =' D= ! F J @? %' =?E' = ' F' =' D@C A?= ' F= @ ;' A' ?' F ' = @%' F@' =J @' DC ? D @' GA E' =DD %' =?E' F@' CA ' A1' C@ ACE ' A E' ?A' @>= ' I@' A? E@C@E' = ' =' J @C@' D@C A?= ' F= @ %' GF F' G= @' D=C FJ @? ' GA E' I@' ;' I %' DA?' =' = @' C@ @CB@E%' F@' Z E>@ ' F@ E' F= ' = ' F@' C@ ACE 'E E' ?A ' A? @C?' F@' C@= %' = ' ?' !: * ' 6 ' @= ?>' F@' DZCC F J @? ' G= ' =C @? %' *3

2V' 1 ' '' 79 19' 49/#' +(/' 0/"4

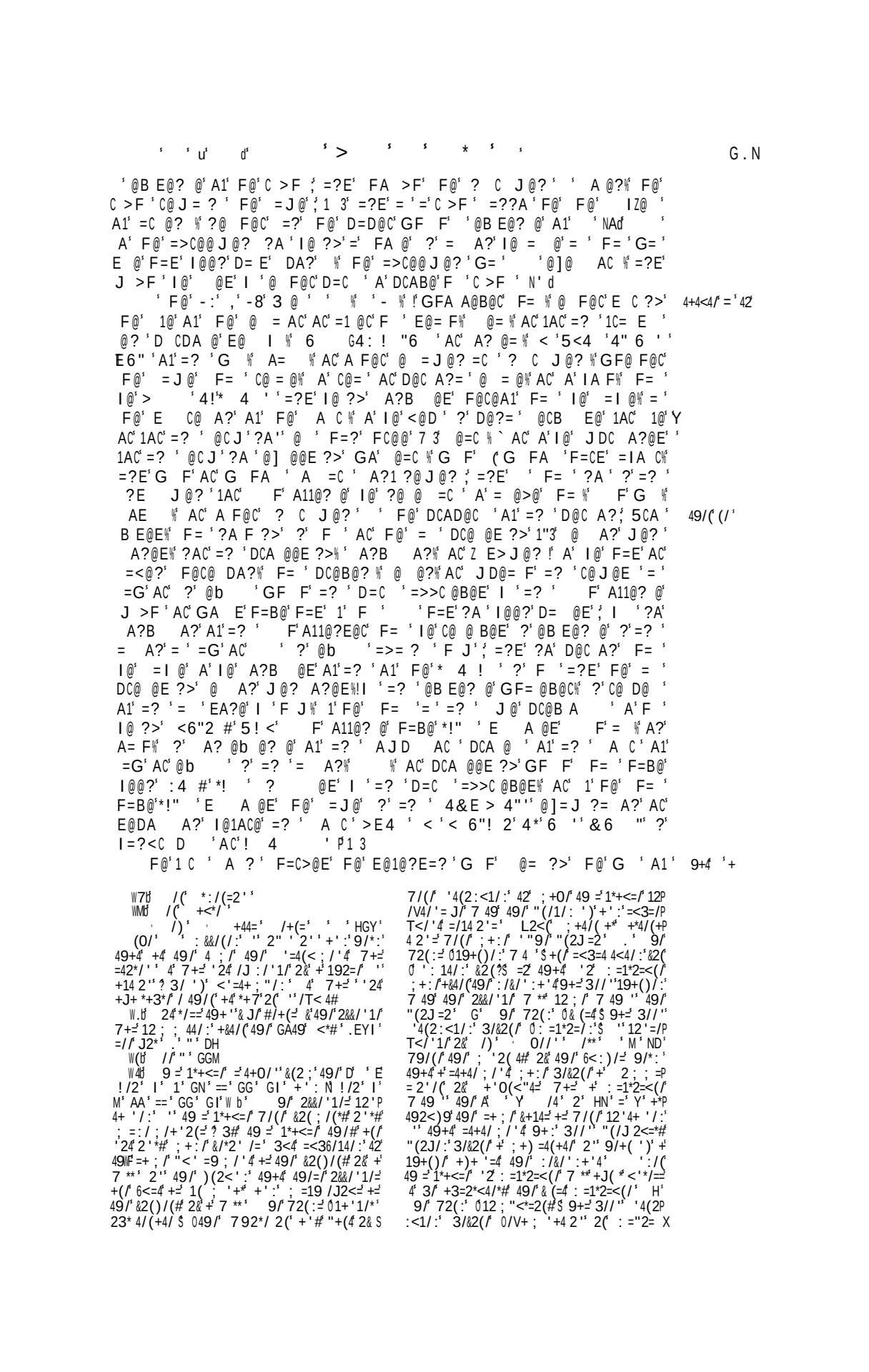
F@' EA C ?@' A1' F=C @C ' =?E' A F@C' G C @?' = C=? @ ' A? @C? ?>' F@' H@= ' ?A ' I @ ?>' F@' IZ@ ' A1' =C @? ' G= ' =CC @E' A' 1=C% F=' ' G= ' FA E@?' F= ' ?A' =C @? ' A E' I@' AJ J @E' A1' F@' IA]' AC' F@ ' ?' GF F' F@ ' G@C@' <@D %' 7&3' 7

'' <' =&1 ; "/ :' +) (// ; /' 4' =' +' 192=f' '' +14 2' ' +' :' 49/((/&2(f' '24 4*X/' =<36/14' 2& *+(1/ '#

DA?' =?' ?E J @? ' 1AC' @= ?>' =' D @ @' A1' D=D@C%' ' =DD@=C@E' F= ' F@' D=D@C' GF@?' A @?' F=E' G C @?' DA?' ' =?' =>C@@ J @? ' I@T G@@?' F@' DCA @ AC' =?E' F@' DC A?@C%' >?@E' I ' @= F' A1' F@ J %' I ' GF F' F@' DC A?@C' A? C= @E' A' I E' GA' A =>@ ' 1AC' F@' DCA @T AC' 1AC' =' J ' D@ 1 @E%' =?E' F@' = @C' =>C@@E' A' D= ' ? = J @? ' = ' @C = ?' =>@ ' A1' F@' GAC<%' =?E' F@' C@ J = ?E@C' A?' AJ D @ A?; =?E' ' G= ' =>C@@E' F= ' = @C= A? ' E C ?>' F@' DCA>C@ ' A1' F@' I E ?> ' FA E' ?A ' =11@ ' F@' A? C= ' ' F@' J @' A1' F@' F@1 ' F@' DC A?@C' F=E' I@@?' D= E' = ' F@' J A?@ ' F@' G= ' @? @E' A' ?E@C' %' I ' F@C@' G= ' J A?@ ' AG ?>' 1AC' = @C= A? %' =?E' F@' GAC<' G= ' ' >A ?>' A?' ?E@C' ' F@' J = @C' A1' F@' =>C@@ J @? ' G= ' A1' F@' B= @' A1' G@? ' DA ?E ' AC' DG=CE %' =?E' F@C@1AC@' I ' =G' C@b C@E' =' = J D%' I ' = ' I@ G@@?' F@' D=C @ ' A' %' ' GA E' I@' =B= =I @' = ' =?' =>C@@ J @? ' G FA '=' = J D%' I ' ?A' @B E@? @' G= ' > B@?' A?' @ F@C' DA ? ' ' G= ' A IZ@ @E' F= ' F@' D=D@C' G= ' =' FA @' ?' = A?%' FA >F' ? = J D@E%' =?E' F@C@1AC@' ?A ' F@' IZ@ ' A1' =C @? ' = ' =' D @ @' A1' D=D@C;' =?E%' DA?' =' = @' C@ @CB@E%' =1 @C' =' B@CE ' A1' > %' ' G= ' F@ E' F= ' F@' DC A?@C' A >F ' ?A ' ?E@C' F@' C J =? @ ' A' F=B@' I@@?' A?B @E' A1' @= ?>' =' D @ @' A1' D=D@C;' 1AC' = ' F@' J @' GF@?' ' G= ' A @?' ' G= ' =?' =>C@@ J @? %' =?E' F@C@1AC@' ' G= ' =' FA @' ?' = A?%' =?E' ' G= ' @=C' F= ' = ' A J J A?' =G' =C @? ' A E' ?A ' I@' A J J @E' A1' =' FA @' ?' = A?;' =?E' F@' C@= A?' GF ' @ E@@E ' =?E' FA @ ' ?' = A?' = @' ?A ' F@' IZ@ ' A1' =C @? ' ' I@ = @' F@' D=C F J @? ' ' @B E@? @' A1' F@' @' A' =?E%' =?E' F@' G C @?' D=D@C

W^% /V ' +*0/(' ' ' ' ' ' ' .AA' (W^]% 4 < ; 1*&' GA' 3' .' +*/' A.M' ' :' 49/' =+' f' *+ 7' =' *+ :' :27 '' '' H ' =4' .MN' +=' 42' 49/' 32V' 2(' 19/=4' 492<)9' 4' 3/' 2&

)(/+4' J+*</' ? +' :' 49/' (/+=2 '') J/ '' =' 49+4' 0 4' =9+*' 3/' 2& 49/' =+ ; /' '+4<(/' 49/' 19+(4/(=' 3/' 2&? ' ' * ' 3 'U



0&(+<:<*/'4 "<("2=/' $ 7 49 '' 49/' 14' Q .' 79/49/(' +'' ': 14 ; /'4 =92<*:' =4+4/' 79+4 49/' &(+<P :<*/'4 "<("2=/' 7+=

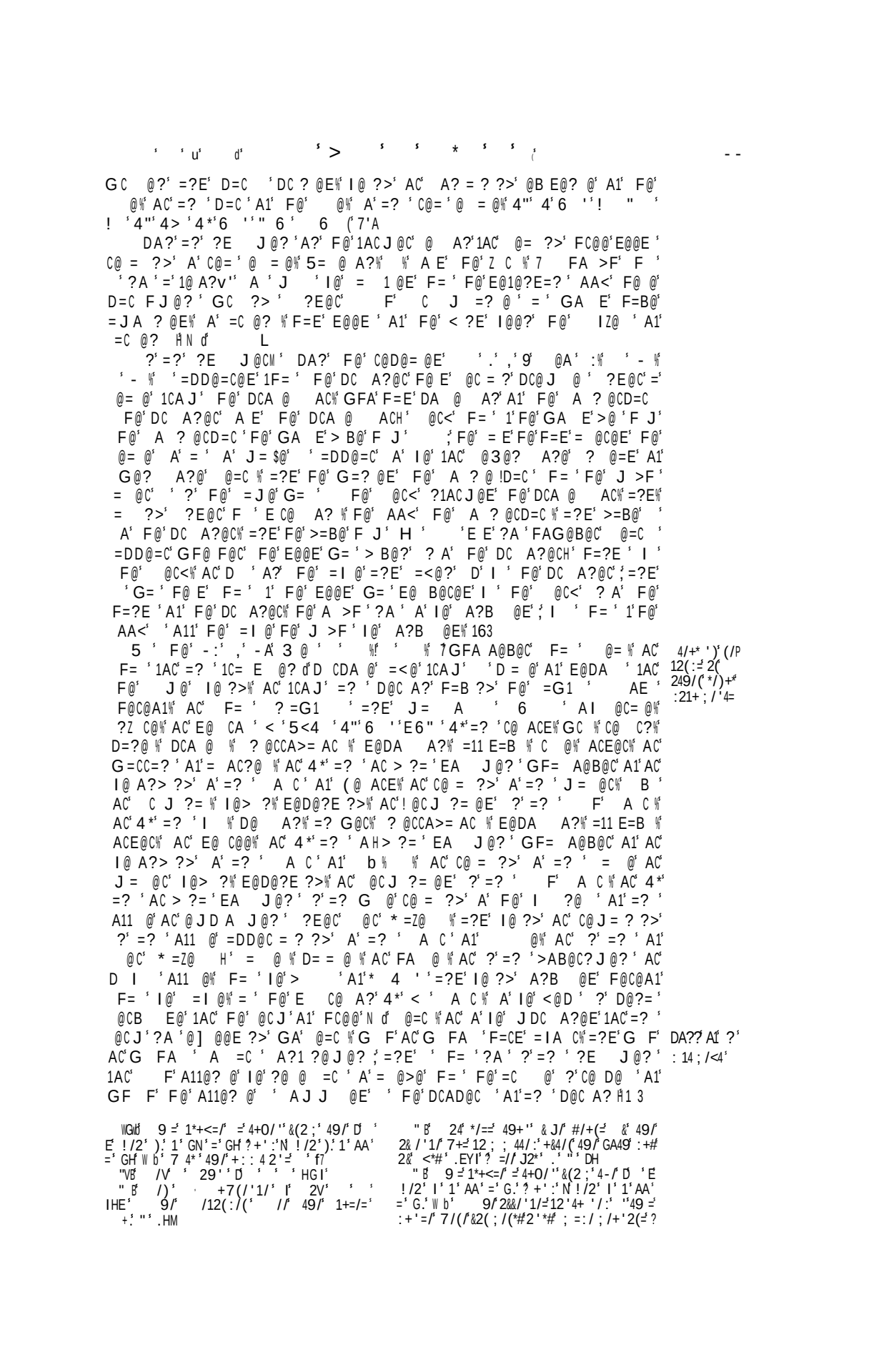
* =C ' = <@CB @' F@' @ A?E' A ?' F=C>@E' F=' F@' E@1@?E^=?' F@' G 'A1' F@' = E' * ' ' 7 ? =G1 Z'=?E' 1AC' =' 1C= E @?' D CDA @' E E' A? @=' $H F@' F CE' A ?' F=C>@E' F=' F@' E@1@?E=?' F@' G 'A1' F@' = E' * ' ' 7 ? =G1 ' =?E' 1AC' =' 1C= E @?' D CDA @' E E' E@ CA H 'G=' AD@?@E' 1AC' F@' DCA @ A?' F=' * C ' = <@CT B @' F=E' E @E' ?' F@' @=C' 9 8% F=B ?>' J =E@' F@C' G % I 'GF F' F@' @1 '=' J' A1' J A?@ ' A' =' D@C A?' ?= J @E' DD@C @ % F@' ? @C@ ' A1' A F@C' J A?@ ' A' F@C' N * C ' H d @C%' * C ' AG =?E% =?E' =1 @C' F@C' E@ @= @' F@' DC ? D=' A' I@' E B E@E' = J A?>' F=' AAD@CH' F EC@?' ; =?E' F=' F 'G 'GJ' > B@?' I ' * C ' = <@CB @' A' =' ? C @% GFA' >=B@' A' * C ' AG =?E% F@' F I=?E' A1' * C ' AG =?E% GFA' D ' 'A?' =' E@ <% 1CA J 'GF F' 'G=' =<@?' =GJ ' I ' F@' E@1@?E=?' ; =?E' F=% =1 @C' F % =E J ? C= A?' G=' =<@?' A 'I ' * C ' AGE=?E' = ' A @?@] A1' < ?' A1' * C ' = <@CB @% =?E' F=' F@' E@1@?E=? % GFA' G=' F@' = >?@@' A1' * C ' (AG =?E% 1AC' F@' I@?@1 ' A1' C@E AC % D= E' =G=' F@' DCAD@C ' ?' J =< ?>' =' E B E@?E' A?' * C ' (AG =?EH' E@I ' E@C' A?% % 7 F@' GACE ' A1' F@' ' A1' 5=C = J @?' =C@' [' 1AC' =? ' 1C= E T @?' D CDA @' E@ CA ' AC' A? @=' =? ' G % AE % AC' A F@C' @ =J@?T =C ' ? C J @? n' F@' D CDA @' A >F % ' F ?<% A' I@' = @E' ?' F@' ?E J @? % GF F' F@C@' ' ?A ' 1 3' ' ' F ?<' = A' F=' 1' F@' E@1@?E=?' A? @= @E' F ' G % =?E' AA<' F@' J A?@ ' GF F' A >F' A' F=B@' >A?@' A' * C ' DD@C @ ' =?E' F=' AAD@CH' F EC@?% A' D=' * C ' (AG =?EH' E@I % F=' GA E' I@' =' 1C= E @?' D CDA @' G F?' F@' ' A1' 5=C = J @? H 1>3

//:=' 1' (/*+4 ')' 42' (/+*" (2"/(4# ' F@' -:' ,' -8' 3 @ ' ' .% ' -9% 7GFA A@B@C' F=' @= % 4" <6 '*4"' 6 ''*"6>#> ' E>"E4 ' # "f' ' 6 '4<) "6 '4" 4 6 ' < '5<4 '4"' 6 ''E6" '4*' =? ' EA J @?' A1' @' A' =?E' F=' I@' > ' A1'* 4 ' ' =?E' I@ ?>' A?B @E' F@C@A1' F=' I@ =I @% =' F@' E C@ A?' A1' F@' A C % A' I@' <@D ' ?' D@?=' @CB E@ 1AC' F@' @C J 'A1' FC@@' 7 3' @=C % AC' A' I@' J DC A?@E' 1AC' =? ' @CC=' ?A ' @] @@E ?>' GA' @=C % G F' AC' G FA ' F=CE' =I A C% =?E' G F' AC' G FA ' A =C ' A?1 ?@ J @?' ;753' =?E' ?' =? ' ?E J @?' 1AC' =?' F' A11@? @' C@ = ?>' A' =? ' EA J @?' A1' @' A' =?E % ' F=' F@' 11 @?' A' = @>@' F' EA J @?' A' I@' AC' A' A? = ?' @B E@? @' A1' F@' @' AC' A1' D=C ' A1' F@' @' @11' F@' D@C A?' AC' A1' A J @' A?@' A1' F@' D@C A? ' F=B ?>' =?' ? @C@ % GF@ F@C' B@ @E' AC' A? ?>@? % @>=' AC' @b =I @% ?' F@' C@=' @ = @' A' GF F' F@' = J @' C@ = @ % =?E' A' J @?T A?' F' C@=' @ = @' AC' A J @' D=C ' F@C@A1 H 7?3

0 21<;/'4 2& 4 4*/' 42' *+<:=S ' @ ' ' 7 F@' @C J '['EA J @?' A1' @' A' =?E 'n' F=' ? E@' =? ' # #' & 6E ' D=D@C% AC' D=C F J @? % GC @?' AC' DC ? @E% AC' D=C

4 2' '$=2' +=' 42' /V1*<:/' 5' J2*<'4+(#' /VP + ; '+4 2'' 2(:/"2= 4 2' ' /' /) ' 9' 4(+9+' ' D 2V' ' ' EA' +=4*#' 9=' "(2J =2' =' /V4/' :/:' 42' /V+ ; '+4 2' =' 1' '' '=2*J/'1#' 9/' "(2J = 2 '' '' 49/' &2(;/(/'+14 ; /'4=' +=' 42' J+*</' 7+=' <' ' '//==+(#' //' '24/' W (b' ' J '42' 9+(:' *+32<(' 1' =//' J2 ' .' "' EM' ' ' ! W d' <4=// 2**2 +#' /) ' .D' ' H.D' 6 ' J2*' .' "' ANM' /) ' ' #' ' ' /' ' ' HYA' +' :' /) ' &' 2<)*+=' .H' ' ') ' 49+4' 4' =' <' '/1/==+(# 42' =4+4/' 49/' "<("2=/ /)' X' 2((=' N ' ' ' EN' 9=' 1+=/' 7+=' :/1 :/:' <' :/(' 49/' D ' E' !/2'): 1' GN' =' GG W(d 24' */==' 49+' ' & J/' #/+(=' &' 49/

2&&/'1/' 7+=' 12 ; ; 44/:' +&4/(' 4*/' GA4*' <*#' .EY I' =//' J2*' .' "' DH W*2d /' 49/' "(2J =2' ' =/1' GN']*&/' "' G.N' =' 42' 9+(:' *+32<(' 1' =// ' "' Y. ' J2*' . ' "' EM W+2d 9=' 1*+<=/' =' 4+O/' "&(2 ;'49/' D ' E' !/2' I' 1' GN' =' GH ? +' :'49/' N !/2' I' h' --.' =' GHW. b' 9=' 1*+<=/' '4(2:<1/=' 49/' '/7' 2&&/'1/' 2&:/=4(2# ')' 1' :21<P ; /'4=' 2& 4 4*/' &2(+' &(+<:<*/'4 "<("2=/' ' :/(' 49/' &2(; /(/'+14 ; /'4=' 49/' N !/2' I' 7/(/' ; =:/ ; /+' 2(=' 9=' 1*+<=/' ; +0/=' 49/ ; ' &/*2'#' 9' .I' .A' /4' 1' .MM' =' GI' (/' :/(/:' 49/' "(2J = 2 '' +=' 42' 49/' '2' =4+4/ ; /'4 2& 49/' J+*</' <' '/1/==+(#' =' 42' 9+(:' *+32<(' /' =//' ' "' A.' J2*' .' "' EM



' G =CC=? ' A1' @] @ A?' A?' @= F' A1' GA' Z E> J @? ' =>= ? ' F@ DC A?@C' ?' GA' D = ? ' ?' F@' A ? ' A C ' F=E' @E' =>= ? ' F J %' ?E@C' GF F' =' @B ' F=E' I @@?' J =E@' F ' F@' F >F' I= 11' A1' F@ A C %' =?E' F@' G =CC=? 'G@C@' F=?E@E' A' F@' ?E@C I= 11%' GFA' G=' F@?' @1 ' ?' DA @ A?' A1' F@' DC A?@CH' >AAE ' F@' DC A?@C%' =' E=' AC' GA' =1 @CG=CE %' 1AC I ' AA<' F@' G=CC=? ' A ' A1' F@' E@D ' I= 11H' F=?E %' <@D ' F@ J %' =?E' F@? ' ACE@C@E' F J' =G= ' =' F=B ?>' ?A' A?>@C' = FAC ' A' C@ J = ?' F@C@%' =?E%' A?' F ' C@1 =' A' @=B@% 1AC I ' C?@E' F J' A ' A1' F@' FA @' ?' GF F' F@' >AAE ' G@C@' AC F@ @' = ' F@' DC A?@C' G= ' ?E @E%' =?E' A?B @E' DA?' =?' ?E T J @? ' 1C= J @E' DA?' F@' - :' ,' -8' 3 @ ' ' %' ' %' GF F' F=C>@E' ? F@' 1 C ' A ? ' =' @= ?>' A1' F@' G =CC=? ' A1' @] @ A?%' =?E' ?' F@ @ A?E' =' =< ?>' A1' F@' = J @' 1CA J' =' D@C A?' F=B ?>' F@' @>=' AE ' A1' F@ J ' 1AC' =' 1C= E @? ' D CDA @' ; ` @ E%' F=g,' F@' 1= ' E E' ?A' =11ACE' =? ' @B E@? @' A1' =' =C @? ' A1' F@' EA J @? %' I ' E E' E A @ =' 1C= E @? ' D CDA @' G F ?' F@' J @=? ?>' A1' F@' = @%' =?E' F=' F@' A?B A?' J ' I @' DDAC @E' A?' F@' @ A?E' A ? %' 1 3

92=/=' '' +14 2'

' F= ' I @@?' AI @CB@E' F= ' G C @?' ? C J @? ' GF F' A? @C?@E' J @C@' D!4 ' ! ' 6 !4 ' = ' I @ ?>' A1' ?A' ? C ? ' B= @%' =?E' ?A' J DAC ?>' =? ' DCAD@C % ?' DA @ A?' A1' F@' D=C ' 1CA J' GFA J' F@ ' G@C@' =<@?%' G@C@' ?A ' = ' A J J A?' =G' F@' IZ@ ' A1' =C @? ;' NEd GF F' A11@? @' =?' I@' A J J @E' A? ' ?' C@ D@ ' A1' >AAE ' GF F' F=B@' A J @' GAC F' ?' F@ J @ B@ %' =?E' EA' ?A ' E@C B@' F@ C' GAC F' J @C@ ' 1CA J ' F@ C' C@ = A?' A' A J @' A F@C' D?> ' N@d ' F@' @> = C@' 1A ?E' '?@ @ =C ' A' ? @C1@C@' DA?' F ' IZ@ %' =?E' J =<@' F@' @= ?>' A1' #5 ' ! ' 6 !4 ' ?' J =? ' ? =? @ ' =?' A11@? @ A1' F@' E@>C@@' A1' 1@ A?

2' :=' 3 **=' '24/=' 1

' A' =C @? ' A1' GC @?' ? C J @? %' I ' F@' - :' ,' -8' 3 @% ' %' ' - .% 7GFA A@B@C' F= ' @= %' 4"' <6 '*>!(6 ''*"6>#> ' C&(!'4 '# "4' ' 6 '4"' 4 : ! "6 ' < '5<4 '4"' 6 ''E6" '4*=?' B= =I @' @ C %' A F@C' F=?' =' EA J @? ' A1' @' A' =?E %' F= ' F@ > ' A1' 1@ A? %' A1' F@' =J @' ?= C@' =?E' ?' F@' =J @' E@>C@@' =?E' D ? F=I @' ?' F@' =J @' J =??@C' = ' 1' F@' F=E' A @?' =? ' F= @ ' A' <@' B= @' GE F' F@' F=C@%' ? @C@ %' AC' E@DA ' A' GF F' F@' @ C ' A' A @?' J = ' C@ = @%' AC' G F' F@' J A?@ ' E @' A?' F@' @ C ' A A @?%' AC' @ C@E' F@C@ I ' =?E' C@ J = ? ?>' ? = 1 @E%' AC' G F' F@ B= @' A1' F@' >AAE ' AC' A F@C' B= =I @' F ?>' " E" #' J @? A?@E%' 4"' " * "" #' 4' ! ' 4"' : ' ' < ' >"! ' (' NMd

0 21<; / '4 2& 4 4*/' 42')22 :=' m[

' @@' %' 7 ?' F@' ? @CDC@ = A?' A1' F ' $ F@' @C J ' [' EA T J @? ' A1' @' A' >AAE ' n' F= ' ? E@' =? ' I ' A1' =E ?>%' ?E =' G=CC=? %' EA <' G!=CC=? %' G=C@FA @' <@@D@CH' @C 1 = @%' G=CC=? ' AC' ACE@C' 1AC' F@' E@ B@C ' AC' C=? 1@C' A1' =? '>AAE ' AC' B= =I @' F ?>%' :4>2< '6 #' 4 #' 4 ' AC' =? ' A F@C' EA J @? ' @E' ?' F@' ACE ?=C

49/#' +(/' ; +: /' &/*2 ' /=' 3#' 49 =' 1*+<=/' 9/' "(2J = 2'' +=' 42' J+*</' '49/' &2(; /(/ ' +14 ; / '4=' 7+=' <' ' /1/==+(#' /!' "OB.' "' GGM' =' 42' 9+(:' *+32<(' 1 ' =/!' ' "' A.' ? J2*' ' "' EM

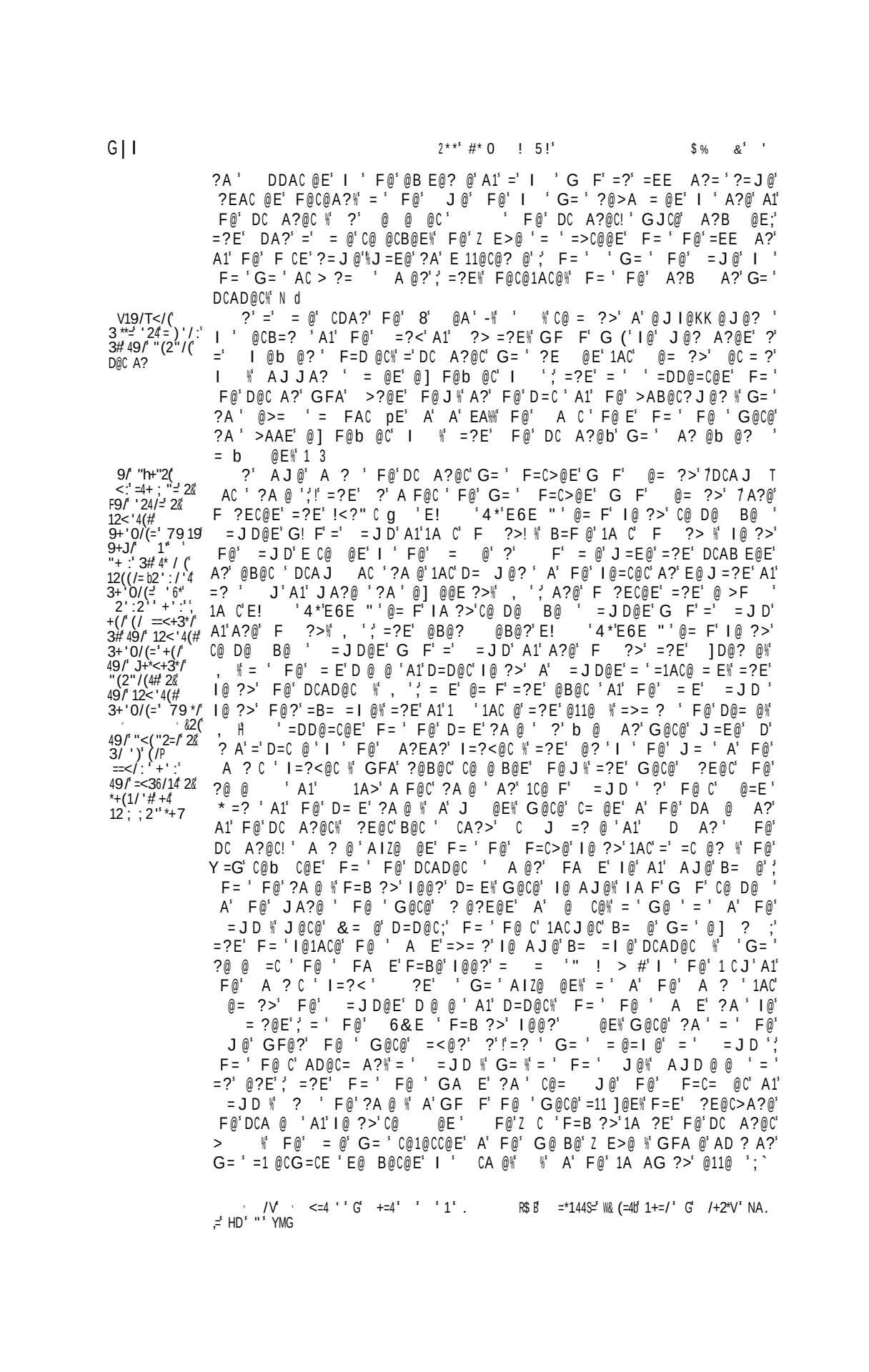
R B ' + */#' I .' ' ' ' ' Y. ' ' 2103<(' ' M ' ' 0 ' 49 '0' 49+4' 79/'' 9/' 4220' 49/' 7+' +'4=' 9 =' ; 24 J/' 7+=' &(+<:<*/'4' /' +14/ :' +=' 9/' : :' '' 2(: /(42 4+0/' "2==/== 2'' 2& 49/')22 :=' +' :' 4<(' '' 49/' 3+ * && 2<4' 9+4' 72<*:' 3/' '' &(+<:' 2& 49/' /V/1<4 2'' +' :' '' &(+<:' 2& 4* /' *+7' +' :' 72<*:' 12' =4 4<4/' +' &(+<:<*/'4

"<("2=/' 7 49 '' 49/' ; /+' ')' 2& 49/' =4+4<4/'S

B' J .' "' G.D

" B' .' +70' ' ' 1' HH' =' HA' G +=4' ' ' 1' .Y' =' HY' "' AND

" B' 9 =' 1*+<=/' =' 4+0/ '' &(2 ; ' 49/' D ' E' ! /2' I ' 1' GN' =' A' ? +' :' N ! /2' I ' 1' AA' =' Y' W b' 9 =' 1*+<=/' '4(2 :<1/=' 49/' '/7 2&&/ ' 1/=' 2& : /=4(2# ') ' 1+ ' 1/** ') ' 2(23P * 4/ (+4 ')' J+*<+3*/' =/1<(4 /=' &2(+'# &(+<:<*/ ' 4' "<("2=/' 9/' *+44/ (' "+(4 2& 49/' &2(; /(1*+<=/' 7+=' 12' & ' / :' 42')22 :=' 1 ' ; / '4 2 ' / :' (+' 7+(4 2& 2(: /(



! F@ b @ A? I J @E ? F = @ A F@ A? E@C= A? A1 F@
Z E>@ G= GF@ F@C F@ D=D@C =?E F@ =J D =C@ ?E@C F@
C J =? @ A1 F@ = @ F@ IZ@ A1 =C @? = AJ JA? =G ;
AC ? A F@C @C J GF@ F@C F@ =C@ F@ DCAD@C A1 =?E A1 =?
B= @ A * @ C =C>@ =?E A N F@ A ? C I=?<@C d GFA G@C@
?b @ A?=I F@ AG?@C A1 F@J F@ @ >@? @J @? F=E D= E
1AC F@ D=D@C F@ DC ? ?> =?E F@ =J D A1 F@ @ D=D@ GF F
A? @ @] @E IA F ? F=C= @C =?E ? B= @ = DCAJ AC ?A @
F@ C F=C= @C =?E B= @ = DCAJ AC ?A @ !@ G@ !@ @C = ?
@] ? = F@ J u! F@ G@C@ A @?; I @B@? ? F = @ F@
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1AC J @C F=C= @C =?E DC ?@ B= @ G= = DCAJ AC ?A @ !@ G@ !@ @C = ?
F@ @ AG?@C F=E = D@ = ? @C@ =?E DCAD@C ! F@ = A1
C@ ?>'' F@J GD E F=B@ J J@E = @ J=? 1@ @E F@ C B= @
= D=D@C 1AC GA E F=B@! =B@E F@ C AG?@C F@ @]D@? @ A1
C@DC ? ?> A F@C ?A @ =?E A1 D C F= ?> A F@C =JD A GF F
@]D@? @ G= DCAB@E F@ G@C@ D A? F@ C I@ ?> E@DC B@E A1
F@ @ D=D@C I F@ C J@ A1 F@ DC A?@C ? GF= @? @ AC
J@=? ?> F@C@1AC@ =? I@ = E F= F@ @ =JD@E D=D@C G@C@
?A F@ B= =I @ DCAD@C A1 F@ C AG?@C V F< ''5 " ! # #
4 ''4*5 6 > 4 <4 <45 " G <> ! ! 4>2< <6 < ''5 " 4*
6 > 4 < &^ < !" 6 > 6 4 < " 4*< 54" #! !&&6 "!6
F@ Z E>@ ; F@C@1AC@ =C@ A1 AD ? A? F= A F@ @] @? A1 F@
DC @ A1 F@ D=D@C F@ DC ? ?> =?E F@ =JD F@ G@C@ B= =I @
DCAD@C I@ A?> ?> A F@ DCA @ AC ; =?E J = F@ DC A?@C F=
I@@? @>= A?B @E H *3
F@ ?E J@? ? A J@ A ? F=C>@E F@ DC A?@C G F 9/9+* ; 2&
@J I@KK ?> D @ @ A1 D=D@C A1 F@ B= @ A1 A?@ D@?? =?E ? A F@C h 2;4(#3+'O
A ? 7D @ @ A1 D=D@C D=C GC @? =?E D=C DC ? @E H F@=C ?> L\=
=JD F@ B= @ A1 GF F G@C@ D@ & $ = F@ A ? !
F=C>@E F@J A I@ A1 F@ >AAE =?E F= @ H A1 F@ DCA @ AC
=JD E C I AC F=E C@J @E A F@ DCA @ AC I DA F@
1C F= B@ A1 A ? C I=?< ?A @ A F@ =JA ? A1 /=?E
@B E@? @ G= > B@? A FAG F= F @ @C &= C@ @ B@E I F@
DC A?@C =?E F= F@ F=E @J I@KK @E F@ ?A @ ; G= AIZ@ @E
F= F@ @ F= B@ A1 A ? C ?A @ G@C@ ?A >AAE =?E F= @ $ 1
F@ ?A @ F=E I@@? @? C@ F@ GA E F=B@ I@@? <4 ! 6 !4
?A >AAE =?E F= @ =?E ? F@ C DC@ @? = @ F@ G@C@ A1 ?A
B= @U A =?b @ D T F@ J >F F=B@ I@@? J=E@ A1 B= @ A
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?> J 6"! P 6 F ACE F D =EE@E 7 G A? E@C A1 F@
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F=B@ F@ I@?@1 A1 H F@ DC A?@C G= =1 @CG=CE @? @? @E A
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DCAB E@E%' A?' @B@C ' DCAJ AC ' ?A @' 1AC' D= J@?' A' I@=C@C' A?'
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@= F%H F@' DCAD@C ' A1' * C' @ ' F@' @ A?E' A ? %' 7 @?' ACE@C ' 1 ' 7+=' ?A ' 1AC' F@' D= J @? ' A1' ' @= F%' =?E' A1' F@' B= @' A1' 8 ' @= F H! F@' F CE' A ? %' 7 @?' @ C @ ' 1AC' F@' D= J @? ' A1' 8 ' @= F%' IA ,! @A' =?E' A1' F@' B= @' A1' 8 ' @= F H ?E' F@' 1A C F' A ? %' 7 @?' :%' ' - %' =' ,' D @ @ ' A1' D=D@C%' @= F' I @ ?>' C@ D@ B@ ' =J D@E' G F' =' =J D' A1']' F ?> %' =?E' A1' F@' B= @' A1']' F ?> %H , ' ' =DD@=C@E' F= ' ?' A? @b @? @' !R7 =?' =EB@C @J @? ' A11@C ?>' A' @?E' J A?@ ' CDA?' I ' A1' @] F=?>@' AC' b @C' D@C A?= ' @ C %' F@' DCA @ AC%' GFA' F=E' A = A?' 1AC' =' J ' A1' J A?@ %' F=E' =?' ? @CB @G' G F' F@' DC A?@C%' GFA' A E%F J ' F@' A E' = AJ JAE= @' F J ' G F' %= ' ' D@C' @? ' F@' DC A?@C' DCAE @E' 1CA J ' F ' DA <@ IAA<' @?' !' I =?<' =J D %' =?E' F@' DCA @ AC' GCA @' A?' @= F' A1' F@ J ' F@' GACE % 7 5= =I @' = ' * @ C ' 5C=@E' =?E' A%' 9 %' @@ C@@ %' A?EA? H " A F ?>' G= ' GC @ '?' A?' F@' =J D ' = ' F= ' J @' I ' F@ @' GACE ;' F@' DC A?@C' AA<' F@' =J D ' =G= ' F@' DCA @ AC' =G' F J ' =>= ?' @B@C= ' E= ' =1 @CG=CE ' ;' F@' = E' F@' DCA @ AC' F=E' A J @E' A' >?' F ' ?=J @%' =?E' F@' =>= ?' DCAE @E' F@' @?' D @ @ ' A1' D=D@C ;' F@' DCA @ AC' >?@E' F@ J %' =?E' GCA @' 7= @D @E' H A?' @= F' A1' F@ J %' =?E' >=B@' F@ J ' A' F@' DC A?@C' =>= ?;' F@' = E' F@' GA E' @?E' F@' JA?@ ' ?' =' 1@G' E= ' I ' F@' J= %' I ' ' G= ' ?@B@C' @? ' AC' F@' DC A?@C' ' G= ' A? @?E@E' F= ' F@' D=D@C ' =<@?' G@C@' ?A ' F@' IZ@ ' A1' =C @? %' =?E' F= ' F@' .' ,' 9' @A' :%' ' - %' A? ' J =E@' D@C1@ ' =?E' =B= =I @' ? C J @? ' F@' IZ@ ' A1' =C @? ;' =?E' @ A?E %' F= ' F@C@' G= ' ?A' 1@ A? %' I @ = @' F@' D=D@C' = J D ' I @ ?>' F@' DCAD@C ' A1' F@' DC A?@C%' ?A' C@ D= ' G= ' A J J @E' ?' =< ?>' F@ J ' @E= @%' %' 7 * ' F' H@ D@ ' A' F@' 1 C %' @ A?E%' =?E' F CE' A ? %' ' =J ' A1' AD ? A?' F= ' GF@?' F@ @' = @D =? @ ' G@C@' =<@?' 1CA J ' F@' DCA @ AC%' F@ ' G@C@' ?@ F@C' I ' A1' @] F=?>@%' ACE@C %' AC' @ C @ ' 1AC' J A?@ H 1 @C' = ?>' F@' 1= %' F@' @=C?@E' Z E>@' DCA @@E@E%' 7 F@ @' D=D@C ' G@C@' =>= ?' =<@?' =G= ' I ' F@' DC A?@C%' =?E' ' =DD@=C ' A' J @%' F= %' GF@?' F@ ' G@C@' A' =<@?' =G= %' F@ ' G@C@' ?@ F@C' I ' A1' @] F=?>@' ?AC' ACE@C ' 1AC' F@' D= J @?' A1' J A?@ %' I ' G@C@' A? ' ?' =' AC ' A1' @ J IC A' = @%' F@C@' !I @ ?>' F@' J @=? ' A1' J =< ?>' F@ J ' I ' A1' @] F=?>@' F@' .' ,' 9' @A' :% ' - %' ' 8%' @?= %' F= ' 1' =? ' D@C A?' F= ' @= ' =? ' 7 I %' ?A @% G=CC=? %' ACE@C%' AC' A F@C' @ C ' GF= A@B@C' 1AC' JA?@ %' AC' 1AC' D= J @? ' A1' JA?@ %' GF@ F@C' A1' F ' < ?>EA J ' AC' =? ' A F@C' = @%H F@' D=C ' ' A' I@' D ? F@E' = ' F@' GA E' I@' 1AC' @= ?>' =' F= @ ' A1' Y F@' <@' B= @' "AG%' FAG' A E' F ' I@' = E' A' I@' A1' =? ' B= @' V =?E' A1' GF= ' B= @' =?' ' I@' = E'% A' I@' V 1' F@ @' D=D@C ' F=E' I@@?' A @?' 1CA J ' =' EG@ ?> FA @%' A E' F@ ' I@' F=C>@E' A' I@' A1' F@' B= @' A1' 8 .' @= F' V F@C@' ' ?A' J ' J @? A?@E' ?' F@ J %' =?E' ?A' EC=G@C;' =?E' F@ ' I@ ?>%' = ' ' I@1AC@' AI @CB@E%' I ' =' < ?E' A1' @ J IC A' @ C %' ' = J ' A1' AD ? A?' F= ' F@' 1 C ' FC@@' A ? ' A1' F ' ?E J @? ' =C@' ?A ' DCAB@E ' F@C@' %' FAG@B@C%' =' 1A C F' A ? %' GF F' E@ C I@ ' F@' D=D@C ' = ' @?' D @ @ ' A1' D=D@C%' @= F' F=B ?>' =']' F ?>' = J D' ;' =?E' DA?' F ' A ? ' F@' b @ A?' %' GF@ F@C' F@' DC A?@C' =?' I@' = E' A' F=B@' A @?' F ' DCAD@C ' V F@' 1A C F' A ? ' A?H@ ' E@ C I@ ' F@ J %' I ' ' @@ J ' A' J @' F= ' F@' CT J =? @ ' ?E@C' GF F' F@ ' G@C@' AI = ?@E' I ' F@' DC A?@C' G@C@' ?A ' F' = ' A' J =<@' F@' DC A?@C' =I @' 1AC' =' 1@ A? ' 1' =' D@C A?' I ' =' 1= @' C@DC@ @? = A?' AI = ? ' F@' DA @ A?' A1' F@' DCAD ' ! ' A1' =?A F@C%' ? @?E ?>' A' A?B@C ' ' A' F ' AG?' @%' F ' ' 1@ A? ;' I ' F@' DCAD@C ' J ' F=B@' DC@B A ' I @@?' ?' F@' DA @ A?' A1' F@

D@C A?' 1CA J' GFAJ'! ' ' F=C>@E' A' F=B@' I@@?' A @?' "A G%' F ?<' F=' F@ @' D=D@C %' ?' F@' = @' ?'LGF F' F@ 'G@C@%' G@C@' F@' DCAD@C ' A1' F@' DC A?@C' @' AA<' F@ J' 1CA J' F ' DA <@ %' =?E' * C' @ ' ?@B@C' F=E' F@ J %' @] @D '1AC' F@' D CDA @' A1' GC ?>' A?' F@ J ;' F@ ' G@C@' ?@B@C' A ' A1' F@' DC A?@CH' >F ;' * C' @ ' GC @ 'A?' F@ J %' = 'G=' ? @?E@E%' =?E' F@' DC A?@C' J J @E = @ 'F=' F@ J' =>= ? ' ' F ?<' F=' F@' DC A?@C' =??A ' I@' A? E@C@E%' = ' F=B ?>' AJ J @E' =' C@ D= ' ?' F@' E< ?>%' = ' F@ 'G@C@' ?@B@C' A ' A1' F ' DA @ A?' = ' = ' F@' = @' @E' NAd' GE ' =' = @' ?' CAB@C%' =?E%' A' J = ? = ?' CAB@C%' ' ?A ' ?@ @ =C ' F1<' F@' D=C ' FA E' F=B@' J =? = ' DA @ A?' A1' F@' >AAE ;' 1' F@' F= '=' C >F ' A1' DA @ T A?%' F=' ' 11 @? ' A' DDAC' =?' ?E J @? ' 1AC' =C @? %' F@C@' J ' I@' F' =' DA @ A?' = ' GA E' @?=I @' F@' D=C ' A' J = ? = ?' C@ D= ' ' F= ' I@@?' ? E@? = ' J @? A?@E' F= ' F@ @' =J D ' J >F ' I@' F=C>@E' ?'= A ? ' A' * C' @ %' I ' F= ' A E' A? ' I@' 1' F@' C=? = A?' G= ' AJ D @ @E ' AG@B@C%' G@ J ' A? ' =<@' ? A' A? E@C= A?' F= ' GF F' A CC@E' A?' F@' = ' A =T A?%' GF@?' F@' GACE ' ['= @D @E' n' =?E' [' ' ia' @ ' n' G@C@' GC @?' ?E@@E%' ' =DD@= ! ' A' J @%' F= ' A?' ?@ F@C' A1' F@' A = A? ' GF@?' F@ @' D=C @ ' J @ %' =?' F@' DCA @ AC' I@' = E' A' F=B@' I=E' @ F@C' F@' DCAD@C ' AC' F@' DA @ A?' A1' F@ @' D=D@C %' A' = ' A' J =<@' F@' DC A?@C' > ' A1' =C @? ' ?' =< ?>' F@' D=D@C ' A ' A1' F@' FA @ H NDd

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/ ; 3*/ ' 49+4' +' 192T ' /' 7 9 *=4' '' 49/' : (+7/(S' 9+ ' : =' 0+' +*<+3*/' =/P 1<(4# $ <4' &' 4' 9/' J2 .:' 2 '' +112<' 4' 2&' 4=' 3/ ')' ==</ :' ; 2(/' 49+ '' & &4//'' ; */=' &(2 ;' +' 3+ '0' 4' ; +# 3/' *+ :' +=' 4' " /1/' 2&' "+"/(

F@' DC A?@C' G= ' F=C>@E' ?' E 11@C@?' A ? ' G F' @= ?>' =' F@b @' 1AC' _' ' # ' =' D @ @' A1' D=D@C%' B= @' A?@' D@?? %' =?E' =?' ACE@C' 1AC' F@' D= J @?' A1' J A?@ ' F@' C@= ' & @ @C?' (= G= ' AJ D=? ' I@ ?>' ?E@ I @E' 1AC' DAAC' C= @ ' A' F@' AB@C @@C ' A1' F@' DAAC' A1' Z = ? A?' ' = J @ ' ?' F@' J' A1' ' ' # ' =' F@b @' 1AC' F= ' = J A ? ' G= %' I ' F@' DCAD@C' = FAC %' EC=G ?' = ' 5=EE ?> A?' A?' F@ C' A?EA?' I=?<@C %' =?E' F@ ?' C=? J @E' FCA >F' F@' F=?E ' A1' B=C A ' A11 @C ' A1' F@' AJ D=? ' A' F@' D@C ? @?E@? ' = ' F@' = ? A?' = A?%' GFA' D = @E' ' ?' F@' F=?E ' A1' F@' DC A?@C' N F@' F @1' @C<' F@C@d%' ACE@C ?>' J' A' D= ' ' A' F@' AB@C @@C%' =?E' A' IC ?>' F J ' =' = J D@E' C@ @ D ' DA?' F ' C@ C?' ?' F ' C@ C?' F@' D@C ? @?E@? ' = <@E' F@' DC A?@C' 1' F@XF=E' D= E' F@' AB@C @@C;' F@' =? G@C@E%' 7) @ %H =?E%' I @ ?>' = <@E' 1AC! F@' C@ @ D %' = E' F= ' F@' AB@C @@C%' ?A ' F=B ?>' A?@' I ' F J %' F=E' DCA J @E' A' @?E' ' A' =' @C = ?' ??' ?' F@' AG?' 1AC' F J ' ?' C F%' F@' DC A?@C' F=E' ?A ' D= E' %' =?E' F@' ?@] ' J AC? ?>' I ' A?@' >A ' ' = F@E' I ' =' C=E@

" B AJ+ '=J' # ; /(' ' ' : ' AGE' ; 49' :' " ' CG(/V' +(4' Y' M' .M] ' W^U /V' +4/=' /V X' </O*27' 2 *+' : ' +' :' 2=+' T' /4' : /* J/(/' :' .DM' // /V X' </O*27' 2" ' 2 '=' 42' 49/' =+ ; /' /&&/14' // /) ' .YM' :' " ' .HH

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F= $ F@$ F@b @% I@ ?>$ @E$?$ = ? A?% FA >F$ J =E@% G F ?$
1 1 @@?$ J @ $ A1$ F@$ I=?<% A E$?A $ I@$ C@=E$ 1AC$ G =? $ A1$ =$ = J D%
=?E$ G= $?A $ =$ B= =I @$ @ C $ A @C E>@% % FA >F $ F= $ F@$
F@b @$ G= $ @ F@C$ @E$ = $5=EE ?> A?% AC$?A $? $ F@$ = F ?>$ A1$
$ = $ = ? A?$; =?E$ F= $?$ F@$ 1 C $ = @$ $ G= $ @=C $ G F ?$ F@$
@] @ J D A?$ A1$ F@$ = J D$;$ 1"3$ =?E$ F= $?$ F@$ @ A?E$ $ G= $
A @?$ I @1AC@$ F@$?>% = I E$ F= $ =?$? = J D@E$ F@b @% J =E@$
G F ?$ E =? @% I $?A $ @E% G= $ =$ B= =I @$ @ C $ G F ?$ F@$
= @$ A @C E>@%H % = A$ FA >F $ F= $ F@$ F@b @$ J >F $ I@$ A?T
E@C@E$ = $ A @?$ B%F@?$ F@$ DC A?@C% ? @=E$ A1$ =DD ?>$ % = $ F@$
G= $ ACE@C@E% ?$ D= J @?$ A$ F@$ AB@C @@C% F=E$ =DDCADC = @E$ $ A$
F J @ 1% A1$ GF F$ F@$ 1= @$ = @ J @?$ A$ F@$ D@C ? @?E@?$ G= $
@B E@? @% =?E$ F= $ F@$ = F ?>$ A1$ $ =1 @CG=CE $ G= $ A? $ 1 C F@C$
@B E@? @$ A1$ F@$ =DDCADC = A?$ F@$ F@b @$ &= $ F@C@1AC@$ C@=E% =?E$
F@$ DC A?@C$ A?B @E; =?E% DA?$ =$ = @$ C@ @CB@E% F@$ Z E>@ $ F@ E$
F@$ A?B A?$ C >F % = $ F@$ @= ?>$ A1$ F@$ D @ @$ A1$ D=D@C$ G= $
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F@$ 1 C $ A ?$ F=C>@E$ F@$ DC A?@C$ G F$ @= ?>$ 1A C$ G=C $ 2=4 2&& 1/
C=? $ =?E$ ACE@C $ 1AC$ F@$ D= J @?$ A1$ J A?@ % A$ G % 1AC$ $ @= F%
=?E$ A1$ F@$ B= @$ A1$ 4 $ @= F$; F@$ @ A?E% 1A C$ G=CC=? $ =?E$ ACE@C $
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= @E$ DA A11 @$ J A?@ $ ACE@C ; =?E$ F@$ F CE% 1A C$ B= =I @$ @ T
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= ? ?>$ GF F$ G= $ F@$ >@? ?@$ >?= C@$ A1$ F@$ DA J = @C$ = $
FC@G I C $ G= $ @=C $ DCAB@E$ F= $ F@$ DC A?@C$ F=E$ A @?$
F@$ D=D@C $ DA?$ =$ = @$ C@ @CB@E% F@$ 1 C $ A I Z@ A?$ G= % F= $
F $ G1 $?A $ =?$ ACE@C$ 1AC$ F@$ D= J @?$ A1$ J A?@ $; I $ F@$ Z E>@ $
G@C@$?=? J A $ A1$ AD ? A?$ F= $ $ G= $ =?$ ACE@C$ 1AC$ F@$ D= J @?$
A1$ J A?@ % F @$?@] $ A I Z@ A?$ G= % F= $ $ G= $ =?$ ACE@C$ I $ F@$
DA J = @C% I $ G= $?A $ EC=G?$ A?$ =? $ A?@ ; I $ F@$ Z E>@ ! G@C@$
A1$ AD ? A?$ F= $ F@$ E@ >?= A?$ AC$ =EEC@ $ A1$ F $ ACE@C$ G= $ 11 T
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$ DHA$ 7+=$ 1 4/ :$ +=$ 42$ ==< ')$ +$ 19/T</$ /+49$ G$ $ $ $ $ HH$ +-9=$ 1+=/$
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A11 @' ?' A?EA?% ?E' = % F=' F@C@' G=' ?A' DCAD@C' DCAA1' F=' F ' G=' ='C@> =C' DA A11 @' ACE@C% =' F@C@' G=' ?A ' 11 @?' DCAA1' F=' F@' ACE@C' G=' >?@E' F ' F@' DA J= @C;' I ' F@'Z E>@' G@C@' A1' AD ? A?' F=' ' G=' ?A ' ?@ @ =C ' ' FA E' I@' ?' F@' F=?ET GC ?>' A1' F@' DA J= @C' F J @ 1;' 'G=' @?A >F' F=' ' G=' ?' F@' XF=?EGC ?>' A1' F@' DA J= @C% AC' AJ@' D@C A?' I ' F J' = FAC K@E' A' >?% N d

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'GF@C@' ='D=C 'G=' AJD@ @E' I '>C@='B A @? @' =?E' J @?= @' A1' E@= F' A' >?' =' DCAJ AC '?A @' A?' =J D@E' D=D@C' DC@B A ' DC@D=C@E' I ' F@' DC A?@C% =?E' F@' DC A?@C' G=' DC@ @?' E C ?>' F@' J @% =?E' & FEC@G' F@' ?A @' = ' AA?' = ' 'G=' J =E@% 'G=' FA E@?' ?A ' A' I@' =' @= @' G F ?' F@' -' @A' -% ' -8' Ú F@' ?E J @?' F=C>@E' F@' DC A?@C' G F' CAII ?>' F@' DCA @ AC' ?' =' EG@ ?>' FA @% =?E' =< ?>' 1CAJ' F J' =' DCAJ AC '?A @' A1' F@' B= @' A1 -% % >?@E' I ' F@' DCA @ AC% =>= ? ' F@' 1AC J' A1' F@' = @' ; =?E' =?A F@C' A ?' = E' F@' ?A @' = ' F@' DCAD@C ' A1' F@' DCA @ AC' F@' DC A?@C' ?B@ > @E' F@' DCA @ AC' A' F@C' FA @% GF@C@' F@' G=' E@ = ?@E' I '1AC @' 1AC' @B@C=' FA J % =?E' = ' @?> F' ?E @E% I '>C@=' B A @? @' =?E' J @?= @' A1' E@= F% A' >?' F@' DCAJ AC '?A @' ?' b @ A?' ' G=' E= @E' * =C F' % . 8% =?E' DCAJ @E' ?' F@' = '1AC J' A1' GA' J A? F ' =1 @C' E= @' A' D= ' F@' DC A?@C% AC' ACE@C% -% ' ?E' F@' DC A?@C' = @ J D @E' A' >@ ' F@' ?A @' E A ? @E' F@' ?@] ' E= L' G FA ' @ ' F@' Z ' F=B ?>' 1A ?E' FA' DC T A?@C' > % F@' = @' G= ' C@ @CB@E' 1AC' F@' A? E@C= A?' A1' F@' Z E>@ ;' F@' DC ? D=' AIZ@ A?' A' F@' A?B A?% = ' C>@E' I

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@' A ? @ ' 1AC' F@' DC A?@C% I@ ?>' F= ' F@' = @%G= ' ?A ' G F ?' F@' -' @A' -% ' -8% F@' ?A @' I@ ?>' A1' ?A' B= @' GF @' ?' F@' F=?E ' A1' F@' D HA @ AC% =?E' F@' = @' A? ' @] @?E ?>' A' @ C@' B= E' @] ?>' @ C @ ' ?' F@' DA @ A?' A1' F@' D=C ' CA I I@E ' ' G= ' =C> @E% F= ' ?A F ?>' A E' I@' = E' A' I@' E @' A?' F ' ?A @' = ' F@' = @' C@b C@E' ;' =?E' F= ' ' ?@B@C' G= ' F@' DCAD@C % ?AC' ?' F@' DA @ A?' A1' F@' DCA @ AC% F@' D=D@C' =?E' = J D' I@ ?>' F@' DCAT D@C ' A1' F@' DC A?@C% =?E' @B@C' A ' A1' F@C' DA @ A?' ;' F= ' F@' DC A?@C' F=E' ?' 1= ' = b C@E' F@' ?A @% ?A ' I ' @= ?>% I ' I ' E C@ ' F@C@' G= H A? E@C=I @' E 11@C@? @' A1' AD ? A?' = J A?> ' F@ ! E>@ ' DA?' F ' DA ? ' ' ' = E% F= ' ? ?@' A1' F@ J' @] DC@ ' @ E' F= ' F@' A11@? @' G= ' ?A ' G F ?' F@' = @';' AJ@' A1' F@ J' F ?< ?>' F= ' Fu' = @' G= ' A? ' ? @?E@E' A' DCA @ ' @] ?>' =B= =I @' ?A @ ' ?' @' F=?E ' A1' F@' D@C A?' 1CA J' GFA J' F@ ' G@C@' =<@?';' =?E' F= ' F ' ?A @' E E' ?A ' AJ@' G F ?' F= ' E@ C D A?% I@ ?>' A1' ?A' B= @' ?' F@' F=?E ' A1' F@' DCA @ AC';' =?E' A F@C ' ?T ? ?>' A' F ?<' F= ' F@' ?A @' G= ' A1' B= @' 1CA J' F@' J A J @?' ' G= ' EC=G?';' I ' F= ' ' ?@B@C' G= ' ?' F@' DA @ A?' A1' F@' DCA @T AC% I ' A? ? @E' = ' F@' J @' ?' F@' DA @ A?' A1' F@' DC A?@C' F@C @ 1% I ' GFA @' E C@ ' F@' DCA @ AC' G= ' AJ D@ @E' A' J =<@' ' ?E' C@% ' % AI @CB@E% F= ' F@' DCAD@C ' ?@B@C' @] @E' ' F@' 1AC @% F ' =CA @' A ' A1' ';' =?E' F= ' F@C@1AC@' ' G= ' E 11@C@? ' 1CA J' F@' = @' A1' J A?@ % ?E' =E J ?>' F= ' 1' F@' DCA @ AC' F=E!' ICA >F ' F@' ?A @' ?' F ' DA <@ % ' GA E' F=B@' I@@?' =' @= @' G F ?' F@' % FA >F' F@' ?A @' GA E' ?A ' I@' =B= =I @' GF @' ?' F ' DA T @ A?' N DA?' GF F' DA A ' I@' FA E' F=B@' F@ = @Ed% @ ' F ' G= ' ?A ' F= ' = @ ' = ' F@' ? ?@' Z E>@ ' A? E@C@E' F= ' F@' GFA @' C=? = A?' G= ' A?@' A? ? @E' = % =?E' F= ' F@' ?A @' G= ' DCA C@E' I ' E C@ % =?E' ?A ' I ' @= ?> ' F C % f' GFA' E 11@C@E% FA >F ' F= ' ' G= ' ?A '=' ?> @' = % I ' F= ' F@C@' G= ' =' E ?> F=I @' ? @CB= ' I@ G@@?' F@' GC ?>' A1' F@' ?A @' =?E' F@' = = ' =< ?>' A1' ' I ' F@' DC A?@C% E C ?>' GF F' F@' DCA @ AC' F=E' F@' RDA @ A?' A1' ';' =?E' F= ' F@C@1AC@' ' G= ' =< ?>' 1CA J' F J' =?' ? C J @?' A1' B= @' G F ?' F@' J @=? ?>' A1' F@' = @% = ' ' GA E' F=B@' I@@?' =B= =I @' =>= ? ' F J' ?' @' F=?E ' A1' =?' ??A @? ' FA E@C ' ?' F ' >CA ?E% = A% * = EA?= E% ' % EA I @E ' @C% % G= ' =I @? ' F@' AD ? A?' A1' F@' J =ZAC ' A1' F@' Z E>@ ' G= ' =1 @CG=CE ' E@ B@C@E' I ' F C % ' @' = @E' ! F= ' = ' F@' @> = C@' = ' F@' J @' A1' D= ?>' F@' -' @A' -% ' -8% ' % GF@C@I ' F@' @= ?>' =' <4 ' ! ' 6 !4 ' G= ' J =E@' 1@ A? % A E' ?A ' DA I ' F=B@' =' = @' <@' F@' DC@ @?' ?' A? @ J D = A?% ' G= ' ?A ' G F ?' F= ' ' A1' 5=C =T J @?' ';' F= ' ' G= ' @ @? = ' A' =C @?' F= ' F@' DCAD@C ' F=C>@E' A' F=B@' I@@ ' A @?' FA E' I@' A1' AJ@' B= @';' F= ' F@' ?A @' ?' F@' DC@ @?' = @' E E' ?A % A?' F@' 1= @' A1' % J DAC ' @ F@C' =' >@?@C= ' AC' =' D@ = ' DCAD@C ' ?' F@' DCA @ AC';' =?E' F= ' ' G= ' A' 1=C 1CA J' I@ ?>' A1' =? ' F@' @= ' B= u' A' F J% F= ' F@' F=E' ?A ' @B@?' F@' DCAD@C ' A1' F@' D=D@C' A?' GF F' ' G= ' GC @?';' 1AC ' =DD@=C@E' F= ' I A F' F@' D=D@C'=?E' F@' ?<' G@C@' F@' DCAD@C ' A1' F@' DC A?@C';' =?E' F@' E@ B@C ' A1' ' I ' F@C' A' F J' A E' ?A % ?E@C' F@' C J T =? @ ' A1' F@' = @% I @' A? E@C@E' = ' B@ ?>' ' ?' F J ' NGd

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? @ ' F@' A C ' A E' =<@' ?A @' Z E = ' F= ' =' I=?<' DA ' I '
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J @' F@' -' @A' -% !' -8' D= @E% 'G= ' ?A ' <?AG?' GF= ' =' I=?<' DA '
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X&@C@' ?A ' ?' @' ? ' GA' @=C ' =1 @C' F= ' = @' D= @E% =?E' F@'
Z E>@ ' FA >F ' F= ' F@ ' A E' ?A ' =<@' ?A @% F= ' GF= ' G= '
=1 @CG=CE ' = @E' =' I=?<' DA ' I ' 1@ ' G F ?' =? ' A1' F@' E@ C DT
A? ' ?' F= ' = @';' =?E' F@ '= A' FA >F ' F= ' F@ ' A E' ?A ' = %
= ' F@' ? C J @?' G= ' ?A ' @' A % GF= ' =' I>%?<' DA ' I ' G= ';
=?E% 1 C F@C% F= ' = ' F@' ? C J @?' G= ' ?A ' GF= % = ' F@' J @' F@'
= @' D= @E% A E' DCAD@C ' I@' = @E' =' I % F@' DC A?@C' FA E'
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A?@' A ?' = ' 7= 'G=CC=?' 1AC' F@' E@ B@C ' A1 >AAE % B K % 1AC' F@'
E@ B@C ' A1' =' G= F%H =?E' ?' A F@C' A ? ' = ' 7=' D=G?ICA<@CH'
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F= ' =' D=G?ICA<@CH ' <@ ' G= ' A @?% =?E' F@' DC A?@C' C@ @ B@E'
' ' G= ` 7 @AC>@' @>= % : % >F' C@@ % CACAD A?' -8 F'
"A % 989 ` - % A E' G= F% V' 8 ' AF?' = = % CA J D A?'
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DA?' =' = @' C@ @CB@E% ' G= ' F@ E' F= ' F ' <@ ' G= ' =' G=CC=?'
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' - % ' 8;' 1AC' F@' GACE' 7G=CC=? %H = ' =DD @E' A' F@' E@ B@C ' A1'
>AAE ' ?' F ' @ A?% A J DC@F@?E ' =? ' ? C J @?' GF F' G=CC=?'
AC' = FAC K@ ' F@' D=C ' FA E ?>' F@' >AAE ' A' E@ B@C' F@ J % =?E'
C@b C@ ' F J' A' A' EA';' =?E' AA< ?>' A' F@' @>= ' @11@ ' A1' F '
? C J @? % =?E' F@' AD@C= A?' > B@?' A' ' I ' F@' ' ,' : ' @A' %
' % =?E' ?A ' A' F@' J @C@' 1AC J' ?' GF F' ' ' @]DC@ @E% F@'
D=G? ZCA<@CH ' < ' J = ' G@ ' I@' F@ E' A' I@' =' & =CC=?' 1AC' F@'
E@ B@C ' A1' >AAE ' % DDA ?>' F= ' ?A ' A' I@' F@' = @% F@'
EA J @?' J = ' G@ ' I@' E@ C I@E' = ' =' D=G?ICA<@CH ' <@ ' AC' D @ @'
A1' D=D@C ' ' @=C ' G= ' A' ? @ ' ' 1@ ' G F ?' F@' C @% I '
GF F' @C = ?' EA J @? ' A1' @% =?E' @C = ?' EA J @? ' A? @C?T
?>' J @C@' FA @ ' ?' = A?% G@C@' ?A ' F@' IZ@ ' A1' =C @? % =?E' '
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& F@C@' F@C@' G= ' =' I C = ' A @ ' = ' A A?% =?E' =' G@@< ' IT
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7 A A?' ? @E' C = ' A @ %" A ' -
7 A A?% @D @ J I@C' % 98 ' * C' & ' ' ? G @% C@= C@C '
5 @= @' A' D= ' F@' I@=C@C' - ' C@@?F= >F% =?E' F=C>@' F@' = J @'
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Á B .B' ? .' 3 ' DC@ E@? H

: &&/(/ '1/' ñ .' "' EG' //' +*=9S /+=/' WXb' /V' ' 9+(:' ' ' ')11
G' /+19 6' .MY.' ' ' ' G.A' ' :' =//' W## /)' . 2((=2' ' /*') ' ' .AE'
49/' 2 ; ;2' 7S/+*49' /(O/=' .G 2V t//' /)' &' X 5.' .' 2V ' ' ' YGN
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% B !&6 ' !"# '6 #'W! <

A1' =C @? ' N Wd' A' = A' =C @? ' J = ' I@' A J J @E' A1' F@ C' @>> ' AC' A ?>' A?@ %' 723

?E' = ' F@' @= ?>' A1' F' =? J = ' ' =C @? %' ' ' = A' =C @? ' A' @= ' F@' DCAE @' A1' F@ J %' FA >F' =<@?' 1CA J ' F@' B ?>' =? J = ' + DD?' F ' >CA ?E' ' G= ' FA E@?' I ' = ' F@' Z E>@ %' A?' =' = @' C@ @CB@E' 1AC' F@ C' AD ? A?%' F= ' J < ?>' =' AG' = ' D= C@%' =?E' @= ?>' F@' J <%' G= ' =C @? ' I!3' ?E' ' F= ' = A' I@@?' FA E@?' F= ' =C @? ' J = ' I@' A J J @E' I ' D ?>' GAA' 1CA J ' F@' IAE @ ' A1' B@' F@@D' =?E' = J I ' G F' =' 1@ A? A ' ? @? ' @!3' ?' A?@' C@DAC ' A1' F ' = ' E@ A?' ' ' > B@?' = ' =' D=C ' A1' F@' AD ? A?' A1' F@' Z E>@ %' F= ' ?' ACE@C' 7 A' DC@B@?' F@' FA >F @ ' =?E' G=? A?' 1CA ' GF F' J >F ' I@' D = @E' G F' F@ @' C 1 ?>' < ?E ' A1' DCAD@C ' 1CA J ' I@ ?>' DCA @ @E' = ' D@ ' =C @? @ %' GF@?%' D@CF=D %' F@ ' G@C@' ? J]@E' G F' =? ' 1C= E @? ' AC' 1@ A? A ' E@ >?%' F@' =G%' DCA @@E ?>' DA?' F@' E@=' # ' & ! !& ! ' C@b C@ ' F@' DCAD@C ' A @?' A I@' A1' F@' B= u' A1' G@ B@D@? @ H N d' F@' E ? A?%' FAG@B@C%' I@ G@@?' >C=?E' =?E' D@ ' =C @? ' G= ' = IA F@E' I ' F@' .' ,' 9' @A' :%' ' ' ' I ' F@' =DD = A?' A1' ' ?' F ' = @' @@ J ' A' F=B@' I@@?' B@C ' b @ A?=I @ ' ?EA I @E ' F@' b =? ' A1' GAA ' =<@?%' 1' A? E@C=I @%' GA E' F=B@' I@@?' =' CA?>' =EE A?= ' CT J =? @' ?' F@' @B E@? @' A1' 1@ A? A ' ? @? ' ?@ @ =C ' A' = ?' =' F=C>@' A1' =C @? ;' I ' DDA ?>' F@' b =? ' ?A ' A' F=B@' I@@?' A1' >C@= @C' B= @' F=?' G@ B@D@? @%' @ ' 1' F@' 1@ A? A ' ? @? ' A1' F@' D=C ' G= ' J =? 1@ %' = %' ' J >F ' F=B@' I@@?' 1CA J ' F@' ? =??@C' ?' GF F' F@' 1= ' G= ' A J J @E%' F@' @' A' GF F' F@' DCAD@C ' G= ' =DD @E%' =?E' F@' I@F=B AFC' A1' F@' D=C Z'%' F@C@' EA@ ' ?A ' =DD@=C' A' F=B@' I@@?' =? ' >AAE' C@= A?' GF ' F' =' =< ?>' FA E' ?A !' F=B@' I@@?' A? E@C@E' = ' D@ ' =C @? %' 1 3

' ; +*=' 1 ' * " ¦ 6 >" * (/1*+ ; / :' 2(: /+:

& F@C@' F@' =? J = ' AC' A F@C' C@= C@ ' =C@' ?A ' EA J @ %' I ' =C@' * " ' 6 >" ' =C @? ' J = %' ?A B W F' =?E ?>%' I@' A J J @E' A1' F@ J %' 1' F@ ' =C@' 1 ' 1AC' F@' 1AAE' A1' J =?%' =?E' E@=E%' C@ = J @E' N=?E' <?AG?' A' I@' Ad%' AC' A?1 ?@E ' F %' 1' F=C@ ' AC' E@@C' I@' A' @? A @E' ?' =' D=C<%' F= ' F@ ' J = ' I@' =<@?' = ' D @= C@%' AC' 1 F' ?' =' C ?<' AC' ?@ %' AC' = ' ' @@ J ' ?' =? ' A F@C' @? A @E' D = @' GF F' ' DC B= @' DC D@C %' =?E' GF@C@' F@ ' J = ' I@' =<@?' = ' =? ' J @%' = ' F@' D @=T C@' A1' F@' AG ?@C;' AC' DF@= =? ' =?E' D=C C E>@ ' I@' A?1 ?@E' ?' =' J @G;' AC' D >@A? ' I@' F ' D' ?' = ' D >@A? FA @;' AC' G=? ' I@' J =C<@E' =?E' D ? A?@E%' AC' FA >F' ? J =C<@Ed' I@'<@D ' = J @ ?' =' J A= %' DA?E%' AC' DC B= @' C B@C;' AC' 1' =? ' A1' F@ @' C@= C@ ' I@' E@=E' =?E' ?' F@' DA @ A?' A1' =? ' A?@ ` F@' =< ?>' A1' F@ J ' G F' 1@ A? A ' ? @? ' G ' I@' =C @? ' I 3' ?E' A1' A J @' F ?> W C@@' 6 >"& ' FA >F' ?A ' 1 ' 1AC' 1AAE%' 1@ A? ' J = ' I@' A J J @E%' 1' F@ ' I@' C@ = J @E;' ?' C@ D@ ' A1' F@ C' >@?@CA ' ?= C@' =?E' A C=>@%' @CB ?>' ' ! 6

B' C' +*/ ' A . . ' .' +7 0 ' ' ' 1' HH' =' IH
%' K W B ' 3 : ' +*/ $' < ; ' YE' YN
e B' '2 ' ' G' +=4 ' ' M ' 1 ' $Y ' = ' IN ' "' Y$D ' .' /+19 ' .D .
W $ Ø' +(4 ' $' 1+=/ ' .' /+19 ' .D . ' G +=4 ' ' ' 1 ' .Y ' =' IN ' "' Y.E
"#B' .' /+19 .DG
" : B' 4' =92<* :' 3/' 23 =/(J/ :' +*=2' 49>4' '' 49/' +3= J+1 4' 2& +(4 ' $' 1+=/ ' G +=4 ' ' 1' .Y ' =' IN ' "' Y.E' 4' =' 1 2' '' 2& 49/' 2" ' 2 '' 2& 49/' 6< :) /=' 49+4' 49/' "(2" / (4# =42*/ '' =92<* :' 3/' +32J/ 49/' J+*</' 2& 47 /*J/" / ' 1/ ' ' :' +4' 49/' 12 ' 1*<= 2 '' 2& 49/' (/"2(4 '' 7 9 19' 49+4' "2= 4 2 '' =' +: J+ ' 1/ : ' 49/' :214(' /' +"P "/+(=' 42' 3/' 12 ' 4(+: 14/ : ' 7 9/(/' 4' =' =+ : ' 0 &' +' 7 10/ :' ; : ="2= 4 2 '' 3/' : =12J/(/ : ' ; +=' 4' =' : /=1(3/ :' 3# (442 ' ' 4' ; +# 3/ /J : / ' 1/' 2& &/*2 ' #' ' 247 49=4+ ' : ')' 49/' 4(&* ')' T<+ ' 4 4# 2& 49/' 49 ')' 4+0/ ' ' S
WD Ø' H' ' =4 ' .MN ' . . M ' ' +*/ ' A . . H' +7 0 ' ' ' 1' HH' =' I . ' I' *+10 2 ; ' GHY ' G' +=4 ' ' ' 1' .Y ' =' I . ' " ' YMD

4 6 !>&'A1'DC ? @ '=?E' ?AI @' D@C A? %' A' J=<@' F@J'1 @E'1AC' >C@='@JDA J@?;' A' F=' =C @?'J=' I@' AJJ @E'A1'F=G<' =?E'1= A? %'GF@?'C@ = J@E'=?E'<?AG?' A'I@' A';1&3'=?E' 'J=' I@' AJJ @E'= A%' ' = E%'A1' A ?>'F=G< %' ?' F@'?@ ;7 3'I ' ?A'A1' F@'@>> 'A1'F=G<'AC' G=? %' FA >F' C@ = J@E%' F@' C@= A?' A1'GF F' @@J ' A' I@' F=' =' @ ' D ? FJ@? %' ?=J@ %'1?@=?E' JDC A?J@? %'G='=DDA ? @E'1AC' =< ?>' F@J'I ' = @'Nd F@' @= ?>'=' A <'A1'I@@' @@ ' A'I@'=EJ @E' A'I@'1@A? %'1E3 & F@C@'D >@A? ' G@C@' F ' D' ?' F@ C' IA]@ ' @B@C '? >F %' =?E' +;f' A @?'A 'A1' F'IA]@ 'E C ?>' F@'? >F %'5=!<@% %'F@E' ' A' I@' 5>@A?%'1 3' =C @? 'NHd A'GF@C@'D >@A? 'G@C@' A' =J@' F=' F@ ' =J@'FAJ@' @B@C '? >F ' A' CAA ' ?' IA]@ ' = ' F@' E@' A1' F@'FA @' A1' F@ C' AG?@C% 'G='F@ E' A' I@' =C @? %' 1' F@ 'G@C@' =<@?'I '? >F 'A ' A1' F' IA]@ %'= F!@]>F' F@' IA]@ ' CB@C@' ?A ' F ' D' = ' ? >F %'Nd ?E' 'F=' I@@?'F@E' ?' A F@C' = @ ' F= ' =J@'D >@A? ' J=' I@' F@' IZ@ 'A1' =C @? %'= FA >F' F@ 'F=B@' =?' ADDAC ? 'A1'>@ ?>' A '=?E'@?ZA ?>' F@J @B@ ' ?' F@'AD@?' =C'13 & F@C@'A?'=?' ?E J@?'1AC' @= ?>' =J@'DF@= =? ' '=DD@=C@E' +;f'" /+' F='DF@= =? H@>>'1CAJ' F@' AB@C 'F=E'I@@?'F= F@E'I ' AJJA?' F@? %'=?E' F@' F@?' G F' F@ C' IZAAE ' F=E' I@@?' C@JAB@E' ? A' =' D=EEA <%'=?E' A?1?@E' ?E@C' AAD %' FCA >F' F@'I=C 'A1'GF F' F@' DF@= =? ' A E'=' '=?' J@'@= 'D= ;' F@' AAD %'G F' F@'F@? %' G@C@' JAB@E'=IA '1CAJ'D= @' A'D= @%'=?E' F@'DF@= =? ' 1A AG@E' F@'F@? ';' F@ 'G@C@' =IA ' =' JA? F' AE%'=?E' A E'1 ' F C 'AC' 1AC 'CAE ';' F@ 'G!@C@'1@E'E= '=' F@' AAD %'=?E' GA E' AJ@' A' F@'<@@D@C' GF@?'F@'GF @E%'=?E' ='? >F ' F@ '?@ @E' ?E@C' F@' F@? ' ?' F@' A C @'A1' J@' F@ 'GA E'F=B@'I@@?'= AG@E' A'@ =D@' ? A' F@' AB@C '=?E' GA E' I@ AJ@' G E' AC E' =JDI@ %' $ %' A E' F@'Z C ' F= %' 1' F@ ' FA >F ' F@' DF@= =? 'G@C@' =J@%'=?E' F=E' ?'1= '?@B@C' I@ AJ@' G E%'=?E' G@C@' ?E@C' F@' A? CA '=?E' EAJ ? A?' A1' F@' <@@D@C' = ' F@' J@' F@ 'G@C@' =<@?%' F@'DC A?@C' G='>' A1' =C @? %'Nd

R B' :' +70' ' ' 1' HH' ='HY' H *<=4'ND' O :' H '=4' .MN' <4' 49/'HD' :'H'1' .N' =' (/"/+*/:'3#49/'D' ' ' !/2' I'1'GD' W4B' :' +*/' A..' 9=' *+7'9+:'(/*+P 4 2'' 42'49/' '9+70=2&&2(;/(':+#= W2B' .:' /' 'D'1' .D'+':' H.' /' ' E' 1' .G' :' +70' ' ' 1' HH' =' IG' G' +=4' ' M'1' .Y'=' I.' "' YMD " B' G' +=4' ' ' 1' .Y'=' I.' "<YMD' 1 4 ')' 33=J' ; 49' ' +#' HH' G' *+1' 2;' HNG' HNH KWVH =' 42' "<' =9;/'4 3#' =<; ;+(# 12'J 14 2'' &2(' <'*+7&<* 0 ** ')' ' 2' 2&")/2'=' =/' GI' 'GA' /4'1' NY' =' GH W(B' <0/S' 1+=/' 2=/' ' (' J' ADD' +':' '(/*+4 2'/' (' !(+')/(' 9/'1+=/' 7+=':/4/(;'/:' 2'' 49/')(2<':'49+4'49/' ")/2'=' 7/(/' (/1*+ ;/:' +':'24'2'' 43/')(2<':'49+4'49/# 7/(/' =9<4' <'" '' 49/ (' ,32V/=' +4'49/'4 ;/'49/# 7/(/'4+0/' ' /V' □' (220=' ' ' ' ! '+':' I' ' ' '.H.' +:'#' /(64' 0 +<4/;' + ;;+* +' &/(+' &+/4+' &</('4' +'=</4+' /4' /V' 12'=</4<:'/' /<'4' /4' (/:/<'4' J2*+'4' /4' (/J2*+'4'W<4'=<'4'1/(J'1)' '"+J2'/=' /4' 12*<;3'/4'9<6<=;2:'B'/2<=T</' '2=4(+' '4/**)<'4<('T<+ ':' <'9+3</('4'+' ;<; (/J/(4/<:' $ (+142''*3'G'1'.'&2*'N' 1 4/:'''49/'1+=/'2&' 7+'=' D /"' .Y' 3' //'..' <=4' '=4' 4' ' '' 49/' +()<;/'4' 2& /7/** &' +':/(=' (2' +1' INM' 2:/(:)/' ' =+:' 49+4' &' ")/2'=' 12;/' <"2'' ;#*+':' ';+#0 **' 49/;'+':'49/'27'/(9+49'24'+'#(/:/:#? 3<4'49/'27'/('2&49/'*+':' =42'4+0/'9//:' 49+4' 9/' 4+0/=' 49/;' '24' 3#+'#;/+'=' "(29 3 4/:' 3#' 49/' =4+4<4/=' :' T<2:' (20/'+':' 2<)942''+112(:' <4' 2'P 4+)<//' ' 9/*:'49/'12'4(+(#':'+':'49+4' 49/' "+(4# 9+49' ' '49/;' &2(' 49+4' 49/#3/' +=' :2;/=4 1=' +':'9+J/' ' +':'2<)94' 24' 42' 3/' 0 **/:' +':' &2(' 49/'0 ') 2& 49/;' +' +1+14 2'' */=? 3<4' +:=' 49/' (/"2(4/('49/' 249/(' 2" ' 2'' =' 49/' 3/=4' /' +*=2' H *+1' 2;' HNG WHd /)' □' 9/+&2('G /':' ' HY.' <0/S' 1+=/'+=' =4+4/:' '' '24/' W(b' 7+=' (/12)' =/:' '' /V' 27/**' G' /':' ' HYG' +(0/' ' 9+:' (<*/:'49/'=+;/'7+# " B' /)' □' /+:' :' L' ' ' HAM' /)' ' 2(#'.M 2V' ' ' GH' /' /)' □' !+('9+;'E' 2V' ' ' IA.

? ?= V , R ?C@ =Z LR:

' =' E 11@C@? ' EA C ?@' DC@B= ' G F' C@ D@ ' A' =? J = ' =?E' A F@C' C@= C@ ' * " ' 6 >" ' GF F' =C@' > " 6!& # ' = ' ' ' A?T E@C@E' F= ' ?A' D@C A?' F= ' =' 11 @?' DCAD@C ' ?' F@ J ' A' DDAC' =?' ?E J @?' 1AC' =C @? ' F ' =C @? ' =??A ' I@' A J J @E' A1' E@@C F=C@ ' AC' A? @ ' ?' =' 1AC@ F= @ AC' G=CC@?' A1' 1 F ?' =?' AD@?' C B@C' AC' DA?E' A1' G E' 1AG GF@?' = ' F@ C' ?= C= ' I@C A1' @ EH D >@A? A ' A1' F@' EAB@ FA @' N d AC' @B@?' A1' G=? FA >F' J =C<@E 1' F@ 'C=?>@' A ' A1' F@' CA = '' I@ = @' ' =??A ' I@' <?AG?' F= ' F@ ' I@ A?>' A' =? ' D@C A? 153 ' =C @? ' J = ' I@' A J J @E' A1' F@' 1 @ F' AC' < ? ' A1' =? ' A1' F@ @' AC' A F@C' C@=T C@ ' 1 ' 1AC' 1AAE GF@?' F@ '=C@' < @E I@ = @' E;F@ '=C@' F@?' C@T E @E' A' =' = @' ?' GF F' =' C >F ' A1' DCAD@C ' ?' F@ J ' J = ' I@' = J@E' =?E' @]@C @E 1?3

' @@ J ' F= ' ?A' D@C A?' F= ' =? ' DCAD@C ' ?' CAA< A' F= ' ?@ F@C' F@ ' ?AC' F@ C' A ?>' A?@ ' =?' I@' F@' IZ@ ' A1' =CT @? N d

'' ' : 14 ' ; / 664 &2(=4/+*' ')' + ' ; ; +* #2& 0N ' ; <: 4 =92/(49+4 4' 7+= / 49/(: /+: ' 4+ ; / ' 2(12 'P & ' / :

' ' A' @=C ' @ =I F@E F= ' FA @' C@= C@ ' GF F' =C@' * "& ' 6 "1 ' =?' A? ' I@ AJ@' F@' IZ@ ' A1' DCAD@C ' I ' I@ ?>' E@=E C@ = J@E AC' A?1 ?@E F= ' ' F= ' I@@?' FA E@?' A' I@' ?@ @ =C ' F= ' F@ ' FA E' I@' A' E@ C I@E' ?' =?' ?E J @?' 1AC' @= ?>' F@J ' F@' DC A?@C F=B ?>' I@@?' A?B @E ' A?' =?' ?E J @?' 1AC' @= ?>' =' DF@= =? ' A1' F@' B= @' A1' 1AC ' F ?> A1' F@' >AAE ' =?E' F= @ ' A1' 4' DA?' =' = @' 4@ @CB@E F@' Z E>@ ' =1 @C' J F' E@T I= @' = ' =>C@@E' F= ' F@' A?B A?' G= ' I=E' ' F= ' ?' = @ ' A1' =CT @? ' A1' =? J = M@C J ' 6 >" ' F@' ?E J @?' J ' FAG' F= ' F@ ' G@C@' @ F@C' E@=E J @ 183 AC' A?1 ?@E' ' F@CG @' F@ ' J ' I@' DC@ J@E' A' I@' ?' F@ C' AC > ?= ' = @' =?E' F= ' ' ' ?A ' 11 @?' A' =EE' 7 A1' F@' >AAE ' =?E' F= @ ' H A1' F' =' A?@ ' N=d

5=C C E>@ ' =I A ' F @@' G@@< ' A E' =?E' =I @' A' 1 ' =' @ GF F' F=E' I@@?' F= F@E' =?E' C@=C@E' ?E@C' =' AJ J A?' F@? D = @E' ?E@C' =' F@?' AAD =?E' =1 @C' F@' C@ J AB=' A1' F@' AAD' F=E' C@ J = ?@E' =I A ' F@' D = @' G F' F@' F@?' = ' F@C' I CAAE @@D ?>' ?E@C' F@C' G ?> ' = ' ? >F J = ' I@' F@' IZ@ ' A1' =C @? NId

F@' DC A?@C' G= ' ?E @E' 1AC' @= ?>' A?@' E@=E' D=C C E>@ =?E' F@' DCAA1' G= ' F= ' F@' D=C C E>@' G= ' GA ?E@E' I ' A?@' AC' A F@C' J @ J I@C' A1' =' FAA ?>' D=C =?E' G= ' D <@E' D' AC' = >F ' GF @' ' G= ' = B@ I ' ?' =' E ?>' = @ I ' F@' DC A?@C =' =' IA= J =?' A?' =' =?= ' G= ' F@ E' F= ' F@' ?E J @?' G= ' ?A ' DCAB@E NAd

Wel E' '=4' .MN' ..M' .' +*/' A.M A..' .' +7O' ' 'M' HE' =' EN' IM' I' * *+1' 2 ' GHA' G' *&4=4' "' ' 1' .Y' =' I .' "' Y2(<4 =//' G' *' 26<' ENG 7"43' .' +*/' A..

"OB E' '=4' ..M' .' +*/' A..' '' E' '=4' ..M' 4' =' =+ : ' 0 <44* / : / /4' 3/ ')' 7 *: ' #/4 79/ '' 9/' =' 0 **/ :'*+(1/ '# ; +# 3/ 12 ; ; 44/ :' 2& 49/' &*/=9' + ' :' =2 2& "9/+=+ '4' "+(4(:) / ' 2(49/' * 0 / ? + ' :' =2' '24/' +' : J/ (= 4# 3/47 / / '' =</9' 3/+=4=' +=' 3/' 0' 4 :' + ' :' 3/ ')' ; + : /' 4+ ; 2' =/ (J/' &2("*/+=<(/' 2'* #' + ' :' =<19' +=' 3/' ; + : /' 4+ ; /' + ' :'=I (J/' &2(&22 : ' 1 ' 79 19' : J/ (= 4# ' 24' 3/ ')' 23=/ (J/ : ' 9+49' ; + : /' ; + '# ; / '' 42' / (($

W#0 + ' ' + ; ' &' 9&210/44' G' ' ' ' NH. ' I' ' ' ' Y. E' 9/' 2<(4 =+ :' 49+4' (220= 7 /(/' '24') / ' /(+**# <=/ : ' &2(&22 : ' 3<4' 49/' 12 ' 4(+(# =' 1/ (4+ '*# 49/ 1+=/' 49' #2<')' (220=' 79 19' +(/' J/ (# 12 ; ; 2 '*# <=/ : ' &2(&22 : ' ! RVB //' ' &' 2' =: +*/' I' ' ' L ' AY' " B' 2<)9 =' 1+=/' G' +=4' ' ' 1' .Y' ' I . " ' YMD W D' ' . ' 9 10*/' HE' ' ' ' ' G. ' ' ' ' ' ' ' ' .AE' ' ' 2J **' ' 0 *492<)9' "+(4(:) /=' 3# ' +4<(/' +(/ 7 *: ' '' 49 =' 1+=/' 49/# 7 /(/' &(2 : ' 49/ (3 (49' 3/ ')' 3(2<)9 <'" 4+ ; / ' "2 '' 49/' &+14=' 2& 49 =' 1+=/' ' 49 ' 0' 49/=/' "+(4(:) /=' 7 /(/' "(+14 1+**# <' : /(49/' 1+(/' +' :' : 2 ; ' 2 '' 2& 49/' "(2=/1<42($ W1D /) ' ' 2/' ..' 2V' ' ' AA I' 2J **' ! ' =+ : ' 0 & 49/' ' : 14 ; / ' 4 9+ :' = ; "*# +**/) / :' 49+4 49/' "(=2 ' / (9+ :' 42*/ '' 2' /S"+(4(:) /' 4' 72<*: ' 9+J/' 3// '' 3+ : ' &2(' 42' ; +0/' +' "+(4(:) /' 49/' =<36/14' 2& *+(1/ '# ' 4' ; <=4' 3/' =92 7 ' / 49/ (49+4' 4' 7+=' : /+: ' 2(' & +* J/ ' 49+4' 4' 7+=' (/

5A= F@C < @E C=II A? CAG? =?E D AJ@ ? I=> =?E AJ@ ? I ?E @ C=DD@E F@J A>@ F@C I F@ @> =?E A? @= @E F@J ? =E F A? F@ =J@ =?E = = D = @ A1 E@DA F@ A E A?B@? @? C@JAB@ F@J I@1AC@ @ >F AH A < ? F@ JAC? ?> F@ DC A?@C =IA = b =C @C A @ @B@? AH A < A? F@ =J@ E= YG@? G F GA A F@C A F@ E F =?E I@>=? A C@JAB@ F@ C=II F@ DC A?@C <?@G A1 F@ J =??@C ? GF F F@ C=II F=E I@@? < @E G= A I@ =<@ = 1= F= F@ DA= F@C F=E ?A ? @? A? A =I=?EA? F@ GCA?>1 DA @ A? A1 F@ C=II $ @ E F= F@ < ?> =?E D = ?> F@ C=II ? F@ E F =?E I @T b @? C@JAB ?> F@J A? @E A?@ ? @B@ !=I @ = A1 =< ?> =?E =CC ?> =G= =?E F@C@1AC@ F@C@ G= ?A =C @? 1#3

:<2/ ' '42 "2==/== 2' ' 2(49+ 4 7+ <' :/(49/ 27' /(S 12'46 2* *+49 = 'P : 14 ; / 4 4 = +**/) / :' 49+ 49/ "+(4(:) 7+ 2 2(&2(; ' ; /(/*#' 9< 4 4 =2' F 2(=<3=4+'1/ + 7+ 9/* *2') +)2 ' 2<)9(= F G 7+ = + 4' ' YMDb' 9/ "(22(2 ' 49/ 4(+ 7+ 49+ 4 49/ 3 (: 7+ 72<' : / : ' +' : 7+ / 49/(" 10/ : <' 2(1+<)94 3# 49/ "(P =2' /(4 49/ 4 ; F 4 7+ " 10/ : <' 2(1+<)94 3# 49/ "(=2' /(? 4 7+ + J/ 3<4 ' + :# ') =4+4/ . 49/ "(=2' /(1+<)94' 79 */ 4 7+ + J/ + 72<' : / : "+(4(:) / 9/ "(22(49/(/&2(F &+ 2 /=4+3 =9 49/ 19+()F ' 49/ ' : 14 ; / 4 49+4 49/ "(=2' /(=42 2' F /+:' "+(4(:) / &49/ "+(4(:) 9+: 3// ' (/ :<1/ : '42 "2==/== 2' 4 /(;) 94 9+J/ 3// ' =2 ; F)(2<' : &2(19+() ') + *+(1/ ' ' + : &&/(/ 4 &2(; 3<4 7 1+ ' ' 24 / 4/('42 49/ T</=4 2 ' 2 ' 49/ "(/=/ 4 ' : 14 ; / 4 $ **/= ' =+ : 49+4 9/ 7 =9/ : 42 +: :' &2(9 ; =/*& 49+4 9/ 7+ ' 24 =+4 =& / :' 49+4 & 49/ "+(4(:) 9+: 3// ' :/+: 79/ ' " 10/ : <' 3# 49/ "(=2' /(4 72<*:' 9+J/ 3// ' ='&& 1 / '4*# (/ :<1/ : '42 "2==/== 2 ' 3# + ' # ; / ; 3/(2& 49/ =9224) "+(4#b' =2 + 42 =<=4+ 49/ 19+() / 2&*+(1/ '# W:b ' 27' */#' IM +(4 ' + ;' 2& 49/ =+ ; 2" ' 2' ' ' :' +((J/ +4 49 = 12' 1*<= 2 ' 3/1+<=/ 9 49 'O 4 ; 2=4 ; "2(4+'4 49+4 49/ 1(; '+ *+7 =92<*:' (=4 2 ' "*+ : =4 '14 2' =' +' :' '24 2 ' : =4 '14 2' = 79 19 +(; "/(1/"4 3*/ 42 2(: '+(# "/(=2' = 2(/J :/ 4 2' *# 42 *+7#/(=' 27 4 = "/(&/14*# 1*/+(49+4 + "/(=2 ' 792 0 **= + (+33 4 +' : 1+((/= 4 +7+# = '24)< *4# 2& *+(1/ '# ? 49+4 "(2"2= 4 2 ' = += 2*:' += 49 12 ; ; 2 ' *+7 4=/*& 9/ ' &' + ; +' 0 ** + (+33 4 ' +' : & ' : ') =2 ; F 2' F =//= 9 ; 9 :/= 4 ' ; /+ ' ') 42 4+0F 4 49F ; 2 ; / 4 49/ "/(=2 ' ,7+419 ') 2/= +7+#' 79# =92<*:' 49+4 3/ *+(1/ '# 9/(F 1/(4+ '*# = + : 14< ; ' ' +*/S */+= 2& 49/ (27 'W"' A.Mb 42 49/ /&&/14 49+4 79/(/ + ; +' 1<4= :27 ' 4(//= 1 ' +' :' 2/=+7+#' +' :' 49/ "+(12 ; /=+)+ ' ' +' 92<(2(= 2 42 &/419 49/ ; ' +7+# 49/ +14 72<*:' 3/ *+(1/ '# / &' =:2 'W K#+<'4' .N.b = + ' +<492(4# 42 49/ =+ ; / /&&/14 ' +' :' ' + ; ' 3# '2 ; / +' = '=/ ' = 3*/ 2& 49/ &+14 49+4 &(2 ; ' 49/ "+=:+)/ ' +*/ 6<:) ; / 4 2& ! 33=' ' WD +<'4' .N.b 4* +4 12' 1*<= 2 ' ;)94 '24 9/ :(+7 " ? 9<4 `4 = ' 49/ "(/=/ ' 4 1+=/ 42 3/ 4+0/ ' += + &+14' Z 49+4 49/ "2+19/(= 9+:' '2 '4/ '4 2 ' 42 +3+' :2 ' 49/ 7(2')&<* "2==1 =2 ' 2& 49/ (+33 4= 9 19 49/# 9+:' +1T< (/ :' 3# 4+0) 49/ ; ' 3<4 "*+1/ :' 49/ ; ' '49/ : 419 += + "*+1/ 2& : / "2= 4 4 ** 49/# 12<*:' 12' J/ ' / 4*#$ (/P ; 2J/ 49/ ; q + ' :' 49/ T</=4 2 ' &2(<= = 79/49/(2 ' 492=/ &+14= 49/ "(=2 ' /(7+= "(2" /(*# 12' J 14/ :' 2& *+(1/ '# 27 ' 1+ ' '24 49 'O 49+4 9/ 7+= '24)< *4# 2& *+(1/ '# 79/ ' 9/ "<4 49/ ; ' ' 49/ : 419 + ' : #/4 4* +4 79/ ' 9/ 1+ ; / 42 4+0/ 49/ ; ' +7+# & / 7+=)< *4# 2& *+(1/ '# . :' =/ / ; = 42 ; / + J/(# /& ' / : :214(' / ' + ' :' ' 12' P 1<(7 49 49/ 2<(4 ' 49 '0 ') 49+4 49/ "(=2 ' /(= '24)< *4# 12' = :/(') 4 42 9/ ; 2(/ 12' = =4/ ' 4 7 49 /+=2 " + ' :') 22 :' =/ ' =/ 42 92*:' 49+4 4+0 ') 49/) + ; / + ' :' 9 ') 4 ' 7 49 49/ ; ; /: +4/ '4/ ' 4 2 ' 2& (/ ; J ') 4 ' + ' :') 2 ') 49/(/ 42 3(') 4 +7+# 7+= '24 *+(1/ '# $ P ' "/(*+10P 3<(' ' 0 9/(/ = + : 14< ; ' 2& 2(: +*/ S 19 4 72<*:' '24 3/ ( ) 94 42 : =P (/)+(:' W.' +*/ ' ' A.Mb 79/(/ 4 = =4+4/ : ' 49+4 +*492<) 9 49/ =/JI(') 2&*/+ :' &(2 ; /=4 ; '=4/(33/#' &' 2 */+ :' 7/(/ 1+((/ :' +7+# : (/14*# 72<*:' '24 3/ &/*2' #' #/4 49 = 2<(4' '' N +(' . :/1 : / : ' 49+4 & 49/ ; + '' 9+ :'=/JI(/ :' 4&(2 ; ' 49/ '33/#' +' :' '' +'' 92<(2(=2 +&4/(1+ ; / +' :' 1+((/ :' 49/ */+ :' +7+#' 4 72<*:' 3/ *+(1/ '# ' Z 3/1+<=/ 49/ +14 = '24 22 '4 '<+4/ :' 3<4 '4/("2P *+4/ : ' +' :' '' 49+4 '4/(J+ 49/ "(2"/(4# *2 :) /49' '' 49/ ( ) 94 27' /(+= + 19+44/& q 49/ '' 49/ */+(' / :' +<492((/&/(= 42 +*42' ' ' .AY' "' HDH ' /JI(49/*/==' 49/((/ 7/ 9+JI 2(:' +*/(/"2(4 ')' + 1+=/ '' N +(' .' 7 49 9 = 27 '' +""(2J+*' +' :' '' / , =:2 ' ' D +<'4' .N.' ! 33= ' ' +') (/+4 +<492(4#' ="/+0= 2& 4 += 3/ ')' 1*/+(*+7' 49+4 & + 12""/(3/ =/JI(/ :' &(2 ;' 49/ =2 *' +' :' +&4/(7+(:= 4+0/ '' +7+#' 49+4 72<*:' 3/ *+(1/ '# & 49+4 "42"2= 4 2 '' = 42' 3/ <' :/(=422 :' 42 9/ 49+4 79/ ' /JI(+ 49 ')' =/JI(/ :' &(2 ; 49/ =2 *' +' :' +&4/(4' = =/JI(/ :' +' :' 9+= 3/12 ; / 49/ "(2" /(4# 2& 49/ 27 ' /(2& 49/ =2 *' +' :' 49/ "+(4# =/JI(')' 4 9+= 2 ' / +7+# +' :' +3+' :2 ' / :' +** 0 ' :' 2& "2==/= = 2 ' ' +' :' +&4/(7+(:= 2 42 3/ 4+0/ '' 9= 7(2')&<* "2==/== 2 '' 9+= 1/+=/ :' 12 ; /= +)+ '' +' :' (/=< ; /= 4' 4 72<*:' 3/ *+(1/ '# $ '9+J/ '2 &+<*4 42 & ' :' 7 49 4' 3<4 4 :2/= '24 +'' *# 42 49/ "(/=/ '4 1+=/ ' &' 4 ; /+ ' = 49+4 49/ &+14 2& 49/(/ 3/ ')' +'' '4/(J+* 2&

'' < 'T<+* P & / :' "/(=2 '' ; +#' 9+J/' +' =<&& 1 / '4 *)+* "2==/== 2 '' 2& 3 '42' =<"P "2(4 +'' 'P : 14 ; / '4 &2(=4/+* ')' 4' &(2 ; '9 ;

F@' DC A?@C' G= ' ?E @E' 1AC' @= ?>' 1 B@' DF@= =? %' C@ C= ?@E' A1' F@ C' ?= C= ' I@C %' F@' DCAD@C ' A1' F@' DCA @ AC' ;' =?E%' DA?' ' =DD@=C ?>' F= ' F@' DCA @ AC' G= ' ?A ' =' b = 1 @E' D@C A?' A' <@@D' AC' FAA ' >= J @%' =?E' F= ' F@' IC@E' F@ @' DF@= =? ' 1AC' = @%' ' G= ' AIZ@ @E' F= ' F@' A E' F=B@' ?A' DCAD@C ' ?' F@ J ' ?AC' =? ' @>= ' DA @ A?' 11 @?' ' A' DDAC' F@' ?E J @?' ' ;' F= ' I ' F@' @B@C= ' = @ ' N@d' C@ = ?>' A' F@' >= J @' =G %' ?b = 1 @E' D@C A?' ' =C@' 1AC I EE@?%' ?E@C' @C = ?' D@?= @ %' A' F=B@' DF@= =? ' ?' F@ C' DA @ A?' ;' =?E' F= ' I ' A?@' A1' FA @' 7 = @ ' = FAC ' G= ' > B@?' A' ='Z @' A1' F@' D@= @' A' =<@' =G= ' 1CA J ' F' D@C A?' =? ' DF@=T =? ' GF F' F@' J >F ' F=B@' ?' F ' DA @ A?' ' CA @%' %' F@ E' F= ' ' G= ' =' 11 @?' @>= ' DA @ A?' 1AC' F@' D CDA @ ' A1' F@' ?T E J @? %' =?E' F@' DC A?@C' G= ' A?B @E ' N Md

2/(' 12' /=' +' :' &=9

F@' @= ?>' A1' # "' A1*! < ' =?E' A1' <6" '=?E' 4 ! ' ?' =' G=CC@?%' , %' F= ' I@@?' J =E@' D ? F=I @' I ' = @%' = ' G ' I@' J@? A?@E' J AC@' D=C =C ' ?' AJ @' A1' F@' 1A AG ?>' F=D @C

' ; +*=' 2& 3+=/' '+4<(/

F@C@' ' @ ' =?A F@C' < ?E' A1' =? J = ' A' I@' ?A @E' ;' ?=J @ %' FA @' GF F%' FA >F' F@ ' J = ' I@' C@ = J @E%' =C@' ?A ' F' A1' GF F' =C @? ' =?' I@' AJ J @E' I 'C@= A?' A1' F@' :6 '4 *' < !"' 6 >" ' AJ @' =? J = ' GF F%' ?' F ' A ? C %' =C@' ?AG' = ' = J @%' AJ @' G F ?' F@' = ' ?' b @ A?' ;' = ' #42 ' =?E' 6 ' ?E' A F@C ' GF F%' FA >F' G E' I ' ?= C@%' =C@' A1 @?' C@ = J @E' I ' =C ' =?E' ?E C %' @=C '1= ' G F ?' F@' = J @' C= @' ;' = ' < 6" ' *4? ' 6E ' &4 ' ' E4 6 ' * "" ' =?E' F@' <@%' 123' F@' C@= A?' DA?' GF F' F ' EA C ?@' =DD@=C ' AC > ?= ' A' F=BE' DCA @@E@E' %' F= ' C@= C@ ' A1' F ' < ?E%' 1AC' F@' J A ' D=C ' G E' ?' F@ C' ?= C@%' =?E' ?A ' @CB ?>%' GF@?' C@ = J @E%' 1AC' 1AAE%' I ' A? ' 1AC' D @= C@%' A >F ' ?A %' FAG@B@C' F@' AG?@C' J = ' B= @' F@ J %' A' I@' A' F >F ' C@>=CE@E' I ' F@' =G' F= ' 1AC' F@ C' =<@ ' =' J =?' FA E' E @ ' " B ?E' F@' EA C ?@' @] @?E ' A' F@' GF@ D %' AC' A ?>%' A1' F' =? J = ' $ F@' C @' I@ ?>' @ =I F@E%' F= ' GF@C@' ?A' 1@ A? ' =?' I@' AJ J @E' A1' =? ' C@= C@ ' F= ' =C@' * "h ' 6 >" ' FA >F' = J @' AC' C@ = J @E%' ' =??A ' I@' AJ J @E' A1' F@' A ?>' A1' F' C@= C@ ' ?' F@' ?@ %' <@??@ %' AC' E@? ' N d

L/(((/4=' +(/' +' ; +*=' 2& +' 3+=/' '+4<(/' +' :' '2' 49/' =<36/14' 2& *+(1/ '#

F@' EA C ?@' C@ D@ ?>' =C @? ' A1' =? J = %' 4 *' 6' :6 L' 6 >" ' G= ' A? E@C@E' ?' =' = @' = @%' GF@C@' F@' DC A?@C' G= ' F=C>@E' ?' F@' ?E J @?' ' G F' @= ?>' 71 B@' B@' = J @' 1@CC@ %' A?1 ?@E' ?' =' @C = ?' F F%' , %H F@' DCAD@C ' A1' # ' AG@C ' F@' @B E@? @' ICA >F ' F@' 1= ' A1' =< ?>' F@' 1@CC@ ' @=C ' FA J @' A' F@' DC A?@C' ;' =?E' ' G= ' = A' DCAB@E' F= ' 1@CC@ ' =C@' B= =I @' =? J = %' =?E' F= ' FA @' ?' b @ A?' G@C@' A E' I ' F@' DC A?@C' 1AC' ? ?@' F ?> ' ' F@' Z C ' F=B ?>' 1A ?E' F@' DC A?@C' > %' F@' = @' G= ' I J @E

4 ; /' :<(')' 79 19' 49/(/' 7+=' '2' &<*' "2==/== 2 '' 3# 49/' 7(2 ') :2/(' 72<*:' (/ ' :/(' 49/' =<3=/1-</ '4' 1+((# ')' +7+# *+(1/ '#' 49+4' "(' 1 "*/' 72<*:' +" "*# 9/(/ ' +' :' & 4' 7/(/' '/1/==+(# 42' :/4/(; '/' 79/49/(' 7/' =92<*:' 2J/((<*/' 2(:' +*/'S= : 14< ; ' 2(' 24' ' =92<*:' (/T< (/' =2 ; /' 4 ; /' 42' 12 '= :/(' ? 3((4 &' 4' =' 42' 3/' <' :/(=422 : ' +=' ; # (249/(' (+ ; 7/*' +' :' 49/' ; +62(4# 2& 49/' 2<(4 '4/(" (/4 4' 4' :2/=' 24+" "*# 42' 49/' "(/=/' 4 &+14=' ? &2(' 79/ '' 7/' & ' :' 49/' "*+()/' T((+' 4 4# 2& ' /44 ')' :/"2= 4/ :' ' 49/' "*+1/' 2& 12 '1/+* ; / ' 4' + (:' 49/' (+33 4=' =4(+" "/ :' 42) /49/(' +*(/+ ;# &2(' ; +(0/4+' :' 9 : : /' '' 49/') (+==' '2' 2' /' 12<*:' :2<34

9<4' 49+4' 49/' "2+19/(=' 9+:' '24' "+(4/ :' 7 49' 49/ (' "2==/== 2 ''+4' +** ' +' :' 49+4' 49/((/' 9+:' 3//' ' +' 12 ' 4 ' '<2<=' "2==/== 2 ' ' L2(49/=/' (/+=2 '=' '49 '0' 49/' "(=2 ' /(' 7+=' '24' "(2" /(*# 12 ' J 14/ :' 2& *+(1/ '#' S W/0' 9/=/' =4+4<4/=' +(/' '24' '27' '' &2(1/ ' //' :' 'G' **'):' 1' HG' =' . W wb' 2 ' /=S' 1+=/' H' < ; S' <=4' 4 4' D 5:' ' ' ' cAD 163(H' '=4' .MN' :' +*/' A. . ' A.G W 0' :' +70' ' ' 1' HH' =' HY' I *+1' :2 : ' GHY' G' +=4' ' ' 1' .M =' IA' "' Y.I W 0' H' '=4' .MN

A F@ A? E@C= A?A1 F@Z E>@ DA?F@b @ A?11F@ F@C1@CC@ J F@ A? E@C@E = =? J = A1 A I= @ =?= C@ F= ?A =C @? =?I@ AJ J @E A1 F@J ?E F@Z E>@ F@ E F= Z E>J@? A >F A I@ =CC@ @E N d

& F C@ D@ FAG@B@C A EA> =?E = A I@= =?E I CE ACE T ?=C <@D ?= = @ A1 A?1 ?@J@? G@ J = C@1@C A F@ F=D @C A?F= IZ@ 1 3

+

H * < 45 " <!E 4* < Y44# ! " E 4*5<! <` 6" '&6 ' < 4&&! #

?@ @ =C = F@C@ FA E I@ ?A J@D@C A?= 11 @? A?@ @ AG?@C F D A1 F@ F ?> A @?; =?E F= F@ FA E I@ = @E ?4/'+'4= J F@ ?E J@? = F@ >AAE =?E F= @ AC DCAD@C A1 F D@CT A? ?E F AG?@C F D J A1 A C @ @] =+>= ? F@D=C I GFAJ F@ >AAE =C@ =<@? @1AC@ ,- 3 @ F@ ZA ? @?=? AC @?=? ?A I@ > A1 @= ?> F F= @1CAJ @= F A F@C1 3

HG 3 @ . . Y =1 @C C@ ?> @]D@E @? A DCAB E@ +(4'/(= 1AC F@I@ @C @ C A1 F@DCAD@C A1 A D=C ?@C F D =?E A F@C ZA ? I@?@1 = AG?@C =>= ? A11@? @ I D=C AG?@C F@C@A1 =?E 1 C F@C A =J@?E F@ =G C@ = ?> A @JI@KK @J@? @ ?= @E $ @ 7 1 =? D@C A? I@ ?> = J@JI@C A1 =? A D=C ?@C F D AC I@ ?> A?@ A1 GA AC J AC@ I@?@1 = AG?@C A1 =? J A?@ >AAE AC @11@ I ?A @ @ C @ AC A F@C DCAD@C F= @= C @JT I@KK @ =? F JA?@ >AAE AC @11@ I ?A @ @ C @ AC A F@C DCAD@C A1 AC I@ A?> ?> A =? F A D=C ?@C F D AC A FZA ? I@?@1 = AG?@C @B@C F D@C A? F= I@ =I @ A I@ E@= G F C @E A?B @E =?E D ? F@E 1AC F@ =J@ = 1 F D@C A? F=E ?A I@@? AC G= ?A =J@JI@C A1 F A D=C ?@C F D AC A?@ A1 F I@?@1 = AG?@C HNJd

?=?> ?E J@? 1AC @= ?>= AB@C@ >?= DD@=C@E F= F@ =2J/(/)'' DC A?@C G@? ? A =F AD =?E F=B ?> D C F= @E AJ@ C 1 ?> "+42 '+ =C @ F@ = E = AB@C@ >?A?= F@ A ? @C =?E = <@E 1AC F=?>@ ;F@ DCA @ AC C?@E CA ?E A F = F IA] 1AC F=?>@ =?E = E 'A? F@ A ? @C GF@?F@1A ?E F@ AB@C@ >?G = >A?@ @ J J @E = F=C>@E F@ DC A?@C G F F=B ?> =<@? D I F@ E@? @E =?E = E F@ =G F J =<@ GF@?F@ C?@E A >@ F=?>@ ; I @b @? A?@ A1 F@J AAD@E EAG?=?E DCAT E @E F@ AB@C@ >? GF F F@ = E F@F=E 1A ?E A? F@ >CA ?E;

Wwb /+( )S 1+=/ 12(22 : +' : +#*/# ' +' : ' ' HAM 9 &/(((/4 7+= 2( ) '+**# +' +4 J/ 2& &(1+ 3<4 9+= 3// '' &2(+*2) '4 ; /3(/ : 0/" 4 +' : =2* : '' 49 = 12<'4(# += +4+ ; / +' ; +* ": ' ' 4/+* ') :2) = = + ; =: /P ; /+'2(=/ GI ' GA /4 1 ' NY ' == .E ' .N ; " ' GNA " B C +*/ ' Y.Y G +=4 ' ' 1 ' .Y =' D " ' YAE ' /4 49/ .' ' G /4 ' 1 ' NY ' = G += 42 *+(1/ '# 3# ; / ; 3/(= 2& 62 '4 =4210 3+'O= W ; B /4 ' &' ; 49 ' HN ' ' ' ' ..G

'24 1/ : ' ' & 3 ' > ' "2 '' +'' ' : 14 ; / '4 V ; : /(49 = =4+4<4/ +)+ '=4 +' "+(4' /(2(+' 62 '4 3/ '/& 1 +# 27 '/(&2(=4/+* ') '19+() ') '49/ " (=2 '/(7 49 3/ ') '+ "+(4' /('' 2 ' /=/4 &12<' 4= +' : '' +' 249/(7 49 3/ ') ' +' 3/ '/& 1 +# 27 '/(2& 49/ "(2 "/(4#=42*/ ' ' /* : ' 49+4 &<"2 '' 49/ /J : / '1/ 4 +"" /+(= 49+4 9/ =)< *4# 2& / ; 3/aa*/ ; / '4 +' : ' 24 2& *+(P 1/ '# 9/ ; +# <"2 '' +' "(2"/(: (/14 2 '' 42 49/ 6<(# ' 3/ &2<' : ')< *4# 2& / ; 3/aa*/ ; / '4 <"2 '' 49/ ' : 14 ; / '4 3# J (4</ 2H=/1 ' DG 2& GI ' GA /4 ' 1 ' NY ' &' <:)/ ' .H 2V ' ' .D

=?E' 'G= ' F@ E' F= ' ' G= ' =' b @ A?' 1AC' F@' Z C ' GF@ F@C' F@' DC A?@C ' D ' EAG?' F@' AB@ !@ >?' G F' F@' ? @? A?' A1' 1C= E T @? ' =DDCADC = ?>' ' = ' AA?' = ' F@' DCA @ AC' ?@E' F ' I= < ' & F@?' F@ ' D=C @E' G F' F@' J A?@ ' =?E' = <@E' 1AC' F@' F=?>@% F@ ' J ' F=B@' ? @?E@E' A' E B@ ' F@J @ B@ ' A1' F@' DCAD@C % =?E' F@' DCA @ AC' I ' >@ ?>' F=?>@' FAG@E' F= ' F@' = b @ @E' ?' F@' DCADA = % =?E' F@' J A?@ ' G= ' A? C B@ ' F ' 1 3

! 22:-' */4' 7 49' +' 92<=/' 2(' *2:) ')

F@' >AAE ' A1' =' C@=E ' 1 C? F@E' AE> ?>' J ' I@' E@ C I@E' = ' F@' AE>@CH ' >AAE % =?E' ?A ' F@' >AAE ' A1' F@' , C > ?= ' AG?@C ' ?' ?E J @? ' G= ' 1AC' I C@=< ?>' ?' F@' E= ' ? @' ? A' ?E@C A?H' FA @% =?E' @= ?>' F ' >AAE ' F@' >AAE ' G@C@' F@' 1 C? C@' A1' -' CAA J ' @ ' I ' ?E@C A?' A' =?A F@C' D@C A?' I ' F@' G@@<' ,' =?E% DA?' -' = @' C@ @CB@E% F@' Z E>@ ' F@ E' F= ' F@' >AAE ' FA E' F=B@' I@@?' E@ C I@E' = ' F@' >AAE ' A1' F' A F@C' D@C A?,' 1AC' ?E@C A?' G= ' ?A ' @? @E' A' F@' DA @ A?% =?E' A E' ?A ' F=B@' 1?= ? = ?@E' C@ D= ;' =?E' F= ' F@' A?B A?' G= % F@C@1AC@% GCA?>% NAd

2(' 9+-' +' 9<=3+' :' =</9' * <' 27 ' /(=9 &X 2& -' =')22:-' 4J-' +)+ ' '=4' 3-' 7 &/' 49+4' =9/' 2(' +' # 2 ' /' 3# 9/(' : /* J/(#' ; +# 12 ; ; 4 *+(1/ ' # 2& 49/ ;

& @' F=B@' @@?' F= ' =' 1@ J @' AB@C ' =??A ' A J J ' =C @? ' A1' F@C' F I=?E% I@ = @' ?' =G' F@ ' =C@' A? E@C@E' = ' A?@' D@C A?% =?E' F@' F=E' =' < ?E' A1' ? @C@ ' ?' F@' >AAE % N Ld ?E' DA?' F@' =J @' >CA ?E' ' F= ' I@@?' FA E@?% F= ' @B@?' =' C=?>@C' =??A ' A J J ' =C @? ' A1' F@' F I=?EH ' >AAE ' I ' F@' E@ B@C ' A1' F@' G 1@% ? @ ' F@' I@' F@C' =E @C@C% 7 3' % 1' F@' F I=?E' I= ' F@' >AAE ' A' =' F CE' D@C A?% = ' F@C@' G ' F@?' I@' =' DA @ A?' ?' F@' I= @@% E ? ' 1CA J ' F= ' A1' F@' F I=?E% ' J= ' I@' =C @? ' 1' F@' G! 1@' =<@' F' >AAE ' G F' =' 1@ A? A ' ? @? ' N H

' ; +'" ; +#' '" 1/(4+ '" 1+=/=' 3/')< *4# 2& *+4& 1/ '# '" 4+0 ')' 9 -' 27 '")22:-' &(2 ;' +' 3+ */ /

1' ' I= ' >AAE ' A' % =?E' =1 @CG=CE ' 6 !& 4 '*> " 6 # !' =<@' I@' >AAE ' 1CA J ' % G F' =?' ? @? ' A' F=C>@' F J ' G F' F@' B= @' A1' F@ J % ' ' 1@ A? % N d F@E' A' 1' % F=B ?>' E@ B@C@E' J A?@ ' A' F ' @C4' B=? ' A' =CC ' A' A J @' E =? ' D = @% E > @E' F J @ 1% =?E' CA I I@E' I@' @CB=? ' A?' F@' CA=E% G F' ? @? ' ' F=C>@' F@' F ?EC@E' G F' F@' A % = ACE ?>' A' F@' DCAB A? ' A1' F@' C@D@= @E' = @% ' G= ' CA I I@C ' ?' ' N d AC' = ' =>= ? ' D@C A? ' A' =< ?>' @B@?' F@ C' AG?' >AAE ' G F' =' G <@E =?E' 1C= E @? ' ? @? % F@C@' ' = 1 , @ @?' @ J DAC=C ' D@ = ' DCAD@C ' ?' F@' I= @@' AC' @CB=? ' A' DDAC' =?' ?E J @? % NGd F@' I A]' A1' =' 1@ J = @' 1C @?E ' A @ ' @ =I F@E' = ACE ?>' A' ' @A ' % ' 8 :% A? = ? ?>' DG=CE ' A1' 1 1 ' DA ?E % G= ' @1 ' ?' F@' AE ' A1' F@' =?E ACE' A1' F@' FA @' GF@C@' F@' A @ ' J @ $ F@' DC A?@C' G= ' A?@' A1' F@' J @ J I@C % =?E' I CA<@' ? A' F@' =?E ACEH ' FA @' ?' F@' ? >F ' J @% =?E' A @' F@' I A]' DA?' =?' ?E J @? ' 1AC' I C> =C ' =?E' @= ?>' F@' I A]' =?E' ' A? @? % =

W]b /) ' , ' 2' /=' A' 2V' ' ' .AY' 9/' /12(: /(Whb /V ' /*=4/ + : ' ' + #*/#' ' +' .' ' ' ' I .. ' /V' &' (<' =7 10' +#*/#' ' +' .' ' ' ' GD' /' 49/' 23=/(J+4 2' -' 2& +#*/#' ' 2'' 49/=/' 1+=/=' .' "' ^IA' -' 42' *+(1/X /-' 3# 4/ ' + ' 4-' +' .' *2 :)/(=' =/' GI' ' GA' /4' 1' NY' =' G . .' 19+" ' 8 'd 5' 5' ' 'D 3

W "b 2* ' .' "' I .' +' .' =/' / ' & ' ** = ' .' '24/' "NB

"OB 3 :

" B .' +*/ ' A . H

W=b 4+<' :& ' GY' .' A' '=4' . .M' . +*/ ' Y . H' Y . I ' .' +70' ' ' 1' EH K-' ID' 2=4' .GH' * T ' + ' : 2' /4 + (

=' ' (/ ' &<(4< ; ' T< -' 12 ; ; 44 4' J/*<4' =' : /3 42(' (/ ' ; ' T<+ ; ' 2(/ : 42(' ") '2 ' -' 1+<=+' : / : 4' = 34(+V/(4' <=4' '=4' * 3' I ' 4 4' . ' =' .M' //' /+(' 220' D ' Y' " ' .E' "' IH' 1 4/ : G /+19' EIM " B 2=4' .GH' .GI ' H '=4' . .M' I *+1' 2 ; ' GH . ' G +=4' ' ' 1' .Y =' D' "' AAE ' + ' : ' =' NM' "' YA I ' 79/(/' 49/' */+(' / : ' +<492(' =+#=' 49+4' /J/ '' '' 49 -' 1+=/' 9/' =//-' 2' 236/14 2 '' 42' *+# ') ' 49/' "(2"/(4# 2& ' 49/')22:-' '' 49/' =/(J+' 4' ? &2(' +' : /* J/(# 42' +' =/(J+ ' 4 =' +' 3+ * ; /' 4' "/(' 2*4' ' +J+)/' & +*4917 ' . ' 2: ' .HA

"NB //' +*=2' 49/' +()< ; /' 4 '' /V' &' /+0 ' ' G /+19' .D.

G@C@' J=?=>@E' I ' =' AJJ @@'A1' F=H@FAE@C %'A1'GI ' F@'DCT
A?@C' G= ' =' J@JI@C';=?E' ?E@C' F@ C' D@C ? @?E@? @' F@'= ='
E @ 'A1' J=?=>@J@? 'G@C@'D@C1ACJ@E' I ' ='>@?@C= 'J=?=>@C'=?E'
=' C@= C@C ' ' AC@'G= ' ?E@C'49/ J=?=>@J@? 'A1' # ' =? CA1%
=' IA '=>@E' F C @@?%'=?E' 'G= 'F 'E 'A' @ 'F@'>AAE '= 'F@%
AC@;' =?E' @= F' E= %'I@1AC@' F ?>' D%' F@' C@= C@C' = @E' = '
49/ AC@%' = @E' =?' = A ? 'A1' = 'JA?@ 'C@ @B@E'G F' =? CA1%
> B ?>' F J' =' E D = @' A1' F' = G? ' ?' A? @b @? @'A1' T
D A? %'A?@'A1' F@' J@JI@C 'A1' F@' A? J @@'3@? 'G F' =? CA1'
A' F@' AC@%'=?E' F=B ?>' =<@?' F@' JA?@ '=?E' J=C<@E' D=C 'A1' %
F@' C@ AC@E' ' A' F@' %'=?E' F@'DC A?@C'G= ' @@?' A' =<@' AJ@
A1' F@' J=C<@E' JA?@ '1CAJ' F@' ' 'G= 'AIZ@ @E' F= %'= ' F@'
DC A?@C' G= ' =' J@JI@C' A1' F@' A @ %'=?E' =' F=C@FAE@C' ?' F@'
1 ?E %' F@' A E' ?A ' I@' A?B @E' A?' @ F>C' A ? ;' F= ' F@'
DA @ A?'A1' =? CA1 'G= ' F@'DA @ A?'A1' F@' A @ %'=?E' F@'
DA @ A?'A1' F@' A @ 'G= ' F@'DA @ A?'A1' F@'DC A?@C' ?' AJJA?'
G F' F@'A F@C' J@JI@C ';' I %'A?' = = @'C@ @CB@E% 'G= 'F@E' F= '
= ' =? CA1 '&= '@JD A @E' A' @ ' F@' >AAE '= ' F@' AC@%'=?E'F=E'
F=C>@'A1' F@' ' F@C@%'1CAJ'GF F' F@' JA?@ 'G= ' A @?%'=?E'G= '
= A ? =I @'1AC' F@' JA?@ %' F@' G= ' 11 @? 'DA @ @E'A1' F@'
JA?@ ' A @?' A' = ?' F@' A?B A?'A?' F@'1C ' A ? 'N d
'GF@C@'A?'=?' ?E J@? '1AC' @= ?>' F@'JA?@ 'A1' '&1@I @C'
=?E' A F@C ' '=DD@=C@E' F= ' GA' <' I 'G@C@'F@ E'= '='=B@C?'
<@D 'I ' '& @I @C%'A?@' = @E' F@' =C?'=?E' F@'A F@C' F@' ?E C %'
A' GF F' F@' J@JI@C 'D= E' J= ' J 'G@@< %'=?E'G@C@'@? @E'
A'='G@@< '= AG=? @' ?' = @'A1' <?@ V' &@I @C' G= '=' J@JT
I@C'=?E' C@= C@C' A1' IA F' I %'=?E' F@' DC A?@C'=' J@JI@C'=?E'
@ C@ =C ''A1' IA F ' F@' DC A?@C'G= ' D= E'=' @=C ' = =C ' 1AC' F '
@CB @ ' & F@?'=' A? E@C=I @' J'G= ' A @ @E%'& @I @C'F=?E@E'
' AB@C' A' F@' DC A?@C%'= ' @ C@ =C %' GFA%' = AJD=? @E' I ' FC@@'
AC=J @ J@?%' AA<' ' A' F@' I=?<%' GF@C@' 'G= ' ?B@ @E' A?'
E@DA ' ?A @' ?' F@' ?=J@ ' A1' F@' C@= C@C'=?E' @ C@ =C '1AC' F@'
J@'I@ ?>' F 'E@DA ' ?A @'G= ' =<@?' F@'?@] ' I'? >F '=?E'
D = @E' ?' F@' I'IA] ' ?' F@'E= ' ?'b @ A?' F@'DC A?@C' A E'
& @I @C' F=' F@' AJJ @@'G@C@'>A ?>' A' J@@'F J' A' =<@' F@'
JA?@ ' A' F@'I=?<' "A?@'A1' F@' AJJ @@' =J@%'=?E'=1 @C' AJ@'
J@' & @I @C' F=?E@E' AB@C' A' F@'DC A?@C' 'A?'= A ? 'A1' F@'
=C?' I%'=?E' 'A?' = A ? !A1' F@' ?E C ;' F@'baC A?@C' E E'
?A 'D= ' F@'JA?@ ' ? A' F@'I=?<%'I ' =I A?E@E'G F' ;'=?E' 'G= '
F@ E' F= ' & @I @C' F=E' D=C @E'G F' F@'DA @ A?'A1' F@' JA?@ '
=I A @ %'=?E' F@C@1AC@' F@'DC A?@C'G= '?A '> 'A1' =C @? %'N=d'
& ' * =C E@?' F=E' =' b =? 'A1' >?' 4&! 6 '=?E%' I ' J@=?' A1'
A?@' AAD@C%' @JD A @E' * =C F%'=?E' A%' > @CJ@?%' A' @?' @C' '1AC'
@?' AE@1C= E' ''DA H ' A?%'=?E' =CC ' ' A' F@' F D']DAC= A?' @]@JD '
1CAC?U' F@' E %'GF F' ' GA' F ?> ' =?E']D@? @' D@C' DA ?E'
* =C F'=?E' A'@? @C@E' '= ACE ?> %'=?E'>=B@'IA?E' A' F@' CAG?'
1AC' '@]DAC= A?%'=?E' @?' ' 'I ' F@ C' >F @C' A' F@' F D'$=?E'A?'
F@ C' G= ' A' F@' F D%' & ' * =C E@?%' ' * =C E@?%' =?E' & < ? A?%'
GFA'F=E' F= %>@'A1' F ' >F @C%' AA<'A ' F@' >?' 4&! 6 '=?E' IT
@E' ?E@C ' =?E' C II F%' F@' AIZ@ ' I@ ?>' A' >@ ' F@' >?'
4&! 6'E '1C@@' F@' ?E J@?' G= ' =>= ? ' ' * =C E@?' =?E

4/+* ')'+'
;+' =' 27'
@?' AE@1C= E'
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*+(1/'#

W?b' /)' ' <()/==' ' ' ! ' GNN' /+4 ') ' ' / 49/(' 2&' 49/' 1*<3=' 9+:'
N 2V' ' ' HMG' //' '24/' W%D' 05 ' 3//'' /'(2**/:
" B' /)' ' +(=9' H' L' ' L' YGH

5 + x + z 8 & > .

& < ? A?1AC @= ?>< @>AAE A1 * =C F=?E A =?E DA? = = @ C@ @CB@E 1A C A1 F@ Z E>@ EA I @E GF@ F@C F G@C@ =C @? I@ = @ F@C@ G= ?A ? @? A F@= * =C F=?E A AC A F=C>@ F@ J I F@ ? @? G= A F@= F@ CAG?; I @B@?Z E>@ F@ E =C @? A? F@>CA ?E F= * =C F=?E A F=E =C >F A! F@DA @ A? ? F@>AAE C@= F@E F@ F D =?E F=E =? ? @C@ ? ?F= DA @ A?=?E F= F@ ? @? A E@DC B@ F@J A1 F= DA @ A? GCA?>1 =FE =>= ? F@ C G =G= =1@A? A ? @? = => ? qF@J ; I@ = @ @]DA @E F@J A= DA? F@ C IA?E ; =?E FF @B@?1 F@C@ F=E I@@?A? ? @? = => ? F@J F@ ? @? A F@= F@ CAG?G= ?F@ AD ? A? A1 J A A1 F@ @B@?Z E>@ 11 @? A J =<@ =C @? N d

DA? =?E J @? 1AC =C @? =DD@=C@E F= F@ DC A?@C 9/(+"(P
F=E I@@? F@ AG?@C A1 F@ DCAD@C = @>@E A F@ A @? I I@ ?> =2 /(+=)/ :
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AC A @] @ =? = >? J @? A C @@ 1AC F@ I@?@1 A1 I 4(<=4//& 2(
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F ?> F@ DCAD@C ? b @ A? " A J =? = DA @ A? A1 F@ 3<4 12 4 </:
DCAD@C G= =<@?I F@ DCA @ AC DC AC A C@J AB= I F@ '2 +) / '4 42
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= @? @E ?E@C F@ E@@E A1 F@ >AAE I F= F@ G= ?A ? "2==/= 2 W: 49/ ;
F@ =C@ =?E AE A1 F@ >AAE = F@ =>@? A1 F@ C @@ ;
=?E DA? = @ C@ @CB@E =1 @C =B@CE A1 > G= F@ E F =
F@ Z C F=B ?>]DC@ 1A ?E F= F@ DC A?@C GJ ?A ?F@ =C@
=?E AE A1 F@ >AAE = F@ =>@? A1 F@ C @@ F @=C
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= @ A E I@ D A? F@ D=C A1 F@ DCA @ A? F@ DC A?@C
F@C@1AC@ I@ ?> ? =G1 DA @ A? A1 F@ >AAE A E ?A I@
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& F@C@ >AAE =C@ ? F@ DA @ A? A1 F@ G 1@ F@ J ! 22: =1 49 "2==/= 2
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= F@ J @ J I@= b @E NEd ?E @B@?1 F@ G 1@ F=B@
A? C@ @ B@E J A?@ = F@ =>@? A1 =?A F@C D@C A? =?E F@
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=C @? ? ?E J @? F=C>@E F@ @= ?> A1 = =?< A1
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F@@D I@ A?> ?> A F@C 1= F@C A1 AC ?GF F F@C F I=?E ?@B@C
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" /V , *0 '=2 ' + +#*/# ' 92* : "(2"/(4# 42 9/(=/6(+(+4/ <=/ + ' : =9/
IDM ; +# 4+0/ "(21// :) = ' (/="/14 49/(/2&
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3/ ' : 14/ : +)+ ' &2(=4/+* ') 49/)22: = += 49/ 9 1(/: 42(=
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1

D= J @? ' 1AC' F@' F@@D%' =?E' ' G= ' A @?' 1CA J ' F@C' I@1AC@' F@' @1 ' F@ ' D = @' GF@C@' F@' C@ @ B@E' ' ' G= ' AIZ@ @E' F= ' F@' ?A @' ?@B@C' G= ' F@' DCAD@C ' A1' ' & = %' @ F@C' = = ' AC' A? C T B@ ' F@' JA?@ ' @ C@E' I ' ' G= ' ?A ' F %' =?E' F@' F=E' ?A' b = 1 @E' DCAD@C ' ?' %' = ' ' ?@B@C' G= ' ?' F ' DA @ A?' ; I ' ' G= ' F@ E' F= ' F@' DCAD@C ' G= ' DCAD@C ' = E%' N@d A' GF@C@' =' G 1@' 1A ?E' =' D C @' A? = ? ?>' JA?@ ' A?' =' F >FG= %' =?E' G= ' CAII@E' A1' ' =1 @C' F@' F=E' DCA @@E@E4' F= 1' =' J @' 1 C F@C%' =?E' F@' AG?@C' A1' F@' D C @' G= ' ?@B@C' E AB@C@E%' 5=C @%' %' F@ E' F= ' F@'

AAE ' A1' = 12 ' J 14/ : 1@ A R

DCAD@C ' G= ' C >F ' = E' ?' F@' F I=?E ' NMd' ' ?' A?@' A ?' F@' DC A?@C' G= ' F=C>@E' G F' IC@=< ?>' =?E' @? @C ?>' F@' FA @' A1' ' ?EC@G %' =?E' @= ?>' F@C' DCAD@C ' ; ?' =?A F@C' A ?' F@' DCAD@C ' &= ' = E' ?' F@' W @@?' ; = ' F@' J @' F@' FA @' G= ' ICA<@?' ? A%' =?E' F@' DCAD@C ' A @?%' F@' F I=?E' A1' ' ?EC@G ' G= ' ?' >=A ' ?E@C' @? @? @' A1' JDC A? J @? ' A?' =' A?B A?' 1AC' @ A? ' ; = ' F@' DCAT D@C ' F=E' I@@?' F@' F I=?EH%' =?E' F=E' C@ J = ?@E' ?' F@' FA @%=?E' F@' G 1@' A? ? @E' ?' DA @ A?' A1' F@' FA @' =?E' F@' >AAE %' ' F@ ' G@C@' A @?' ; =?E' A?' =' = @' C@ @CB@E%' ' G= ' F@ E' F= ' F@' DC T A?@C' A E' A? ' I@' A?B @E' A1' =C @? ' A?' F@' @ A?E' A ? %' GF F' = E' F@' DCAD@C ' ?' F@' W @@?%' 1AC' F@' >AAE ' G@C@' F@' DCAD@C ' A1' F@' CAG?' G FA ' A11 @' 1A ?E%' I ' F@' FA @' G= ' F@' FA @' A1' F@' F I=?E' ? ' A11 @' 1A ?E%' R3B' ?E' GF@C@' A?@' A ? ' = E' F@' DCAT D@C ' ?' >AAE ' ?' =' J =CC @E' GA J =?%' =?E' =?A F@C' ?' F@' W @@?%' =?E' F@' GA J =?' DCAB@E' F@C' J =CC =>@' =?E' = @E' F= ' F@C' F I=?E' F=E' I@@?' C=? DAC @E%' ' G= ' F@ E' F= ' F@' C@ ACE' A1' F@' A?B A?' J ' I@' DCAE @E' A' DCAB@' F= ' F@' >AAEA' B@ @E' ?' F@' W @@?%' NMd

9/' 27 ' /(=9 '" 7 ** ' 24 3/' : J/=4/ :'&(2 ;' 49/' 4(</' 27 ' /(' 3# + '' '4/(' ; / : +4/' 42(P 4 2<= 4+0 ')

F@' C@= ' AG?@ ' A1' >AAE ' G ' ?A ' I@' E@DC B@E' @ F@C' A1' F@' DCAD@C ' AC' DA @ A?' ?' =G' A1' F@ J ' I ' =' 1@ A? A ' =< ?>' 1%' F@C@1AC@%' ' @= ' F@' >AAE ' A1' % =?E' =1 @CG=CE ' ' @= ' F@' = J @' >AAE ' 1CA J ' %' ?' F' = @' ' ' =' 1@ A?%' I A F' = ' A' ' =?E' = ' A' %' =?E' F@' J = ' I@' ?E @E' 1AC' @= ?>' F@' >AAE ' A1' ' Nd DA?' F ' IZ@ ' A E%' %' ?' E@ B@C ?>' F@' AD ? A?' A1' F@' G@ B@' Z E>@ ' ?' =' = @%' = E%' 7 ' ' =' C @' A1' =G' @b = ' G@ ' <?AG?' =?E' @ =I F@E' F= ' F@' DA @ A?' A1' F@' C @' AG?@C' =??A ' I@' E B@ @E' I ' =' AC A ' =< ?>' ; =?E' F@C@1AC@' 1' =' D@C A?' ? =G1 ' =<@' J ' >AAE %' =?E' =' @ A?E' D@C A?' =<@' F@ J ' =>= ?' 1CA J ' F J %' ' J = %' 1' F@' >AAE ' G@C@' 1@ A? A ' =<@?%' ?E ' F' @ A?E' D@C A?' 1AC' F@' F@1 %' =?E' = @>@' ?' F@' ?E J @?' F= ' F@' >AAE ' =C@' J ' DCAD@C ; I@ = @' F@ @' = ' A1' F@1 ' EA' ?A ' F=?>@' F@' DA @ A?' A1' F@' C @' AG?@C HN d ' =' E ? A?' ' =<@?' ?' F@' 1A AG ?>' = @' 1' ' @= ' F@' FAC @' A1' % =?E' =1 @CG=CE ' E@ B@C ' ' A' %' GFA' G= ' ?A' D=C ' A' F@' 1 B ' @= ?>%' =?E' ' C E@ ' =G= ' G F' ' 6 !& 4 '*>"6 #! ' @ ' ' ?A' 1@ A?' A' ' $ I@ = @%' FA >F' F@' FAC @' G= ' A @?' 1CA J' % @ ' ' G= ' A @?' I ' %' =?E' ?A ' I ' %' 1AC' ' E E' ?A ' =<@' ; % ?@ F@C' ' F@' =' 1@ A?' A' %' 1AC' F@' F=E' ' I ' F ' E@ B@C %' 1 3

" B /V , ' 23/(4=' D' ' ' ' IEA' 44*/ : +*/ ' ' +&4/(' 12 ' =<*4 ')' +44/=2 '

" B' /) ' , ' + 27=' G' 2V' ' ' YH' /I' ' 24/' " B

"3B /) ' ' 9 4/9/+ : ' G' 22' ' .E. ' N' ' ' IGN' /I' ' /V4' ' 24/

" B /) ' , ' 29 ' =2 ' ' ' 2V' ' ' AN' +44/=2 ' ' ' + ' :' !<(' /6(' ' 9/=/' *+=4

472' 1+=/=' 7 /(/' : /1 : / :' 3/&2(/' 49/' "+= ')' 49/' HH' ' HI' /4' 1' GH' 79 19' +32* =9/=' &2(&/ 4<(/=' &2(' 4(/+=2 '' + ' :' &/*2 '#' /I J2** ' . ' " ' . MH

R B' C +*/ ' AMD' G' +=4' ' ' 1' . Y =' 8' - ' YAI

M ' B #! 2<*: ' ' '' *0 ' =2 ' S=' 1+=p' . /+19 ' AGG W$b' . ' +*/ ' YMD

= ' F1 C' >AAE %' N>d' ?' = @ ' A1' F '< ?E' ' ' A? E@C@E' F= ' F@'
D=C @ ' F=B@' =' DA @ AC ' DCAD@C ;' I@ ?>' =? G@C=I @' A' F@ C'
@JD A @C %' =?E'I@ ?>' =D=I @'A1' J = ? = ? ?>' =?' =DD@= ' A1'CAII@C '
AC' =C @? %' =?E'F=B ?>'C@ A?%' NCd

(2''&2<' :' '' +' 1+'+*
& F@C@' A?' =?' ?E J@? ' 1AC' @= ?>' @C = ?' CA?' A1' F@'
AJD=? ' A1' F@' DCADC @ AC ' A1' F@' =JAC>=? F C@' =?= ' "=B T
>= A?%' ' =DD@=C@E' F= ' F@' CA?' F=E' I@@?' =<@?'1CAJ ' F@' =?= '
I ' F@' DC A?@C%' GFA' G= ' ?A ' ?' F@' @JD D ' A1' F@' AJD=? %'
GF @' ' G= ' ?' DCA @ ' A1' I@ ?>' @=?@E' ;' =?E' F= ' 1' F@' DCAD@C '
1A ?E' A?' F' A = A? ' ?' F@' =?= ' A E' I@' E@? 1@E%' ' G= '
C@ C?@E' A' F@' AG?@C%' A F@CG @' ' G= ' <@D !I ' F@' AJD=? ;'
' G= ' F@ E%' DA?' =' = @' C@ @CB@E%' F= ' F@' DCAD@C ' G= ' C >F '
= E' ?' F@' AJD=? ';' 1AC' F@ C' DCAD@C ' ?' F@' CA?' I@1AC@' ' G= '
=<@?' =G= ' G= ' A1' F@' =J@' ?= C@' = ' F= ' GF F' =' =?E ACE' F= '
?' >AAE ' @1 ' I@F ?E' I ' =' > @ %' =?E' DCAD@C ' A' @1 ' ' ?' F@'
DA @ A?' A1' F@' =?E ACE' 1AC' F@' D CDA @' A1' E@ B@C ?>' ' D' A'
F@' C @' AG?@C%' =?E' F@' F= ' =' 11 @?' DA @ A?' A' J = ? = ?' =?'
?E J@? ' 1AC' =C @? %' N d

A' =?' =>@? ' F= ' 11 @?' D@ = ' DCAD@C ' ?' F@' >AAE ' A1' F '
DC ? D= ' A' DDAC ' =?' ?E J@? %' = ?>' F@J ' = ' F ' DCAD@C %' a3
2' /# '' "2=P ?' =?' ?E J@? ' 1AC' @= ?>' ?A @ ' =?E' AB@C@ >? %' F@' JA?@ '
=/== 2 '' 2& 2' /' A1' 5 ' FG= @ %' ' =DD@=C@E' F= ' F@' G= ' ?' D=C ?@C F D' G F'
2& =/J/(+' == %' GFA' B@E' ?' @ > J%' =?E' F= ' F@' JA?@ ' ?' b @ A?' G= '
" - ' /(= D=C ?@C F D' DCAD@C ' @' F=E' D ' F@' ?A @ ' ?' F ' DA <@ ' 1AC'
F@' D CDA @' A1' A I = ? ?>' I =?<' DA ' I ' A' I@' @?' A' F ' D=C ?@C'
?' @ > J' A' I@' @E' 1AC' D=C ?@C F D' DFCDA @ ' F@' AB@C@ >? '
G!@C@' F@' DCAE @' A1' =' F@b @' EC=G?' I ' F J ' A?' =' I=?<%' ?' GF F'
F@' D=C ?@C F D' JA?@ ' G@C@' E@DA @E%' I ' F@' = A ?' G= ' ?'
F ' ?= J @' = A?@ ' F@' JA?@ ' G= ' EC=G?' A ' 1AC' F@' D CDA @' A1'
I@ ?>' @E' ?' F@' I ?@ ' A1' F@' 1 CJ%' I ' AJ@' D=C ' A1' ' GA E'
DCA I=I ' F=B@' I@@?' @E' ?' F ' AG?' DC B= @' E I C @J@? ' @'
A? E@C@E' F J @ 1'C@ DA? I @' A' F ' D=C ?@C' 1AC' F@' A @?' JA?@ '
F@' JA?@ ' = ' F@' J@' ' G= ' A @?' G= ' ?' A?@' A1' F@' =?B= '
I=> ' @E' ?' F@' ZA ? ' I ?@ ' ' G= ' F@ E' F= ' F@' DCAD@C '
G= ' >F ' = E%' = ' FG= @ ' F=E' =' D@ = ' =?E' ?E B E = ' C ' A1'
F@' ZA ? ' DCAD@C %' NGd

9/(/'49/' DA?' =?' ?E J@? ' 1AC' @= ?>' >=C%' F@' DCAD@C ' A1' F@'
"2==/== 2 '' 2& A?EA?' #A <' AJD=? %' ' =DD@=C@E' F= ' C F=CE%' =' =CJ=?%'
"(2"/(4#' =' G= ' @JD A @E' I ' A?@' = F' A' A?B@ ' GA' FA> F@=E ' A1' >=C%'
"+(4/ :' 7 49' 3# F ' DCAD@C %' 1CAJ ' F@' A?EA?' #A < ' A' F ' G=C@FA @%' =?E' F= '
+' 3+ */'/' <' : /(C F=CE' @?' F@' DC A?@C' G F' GA' E@ B@C ' ?A @ ' =?E' A?@' A1' F '
+' ; =4+0/ ' 9 = FAC @ ' =?E' =C ' 1AC' F= ' D CDA @%' I ' F= %' F@' @C<' UA1' F@'
="/1 +' "(2P A?EA?' #A <' AJD=? ' E@ B@C@E' A' F J%' I ' J =<@%' GA' FA> T
"/(4#' =' '24 F@=E ' A1' >=C' I@ A?> ?>' A' =' F CE' D@C A?' F@' DC A?@C' =1 @CT
: J/=4/ : ' +' :' G=CE ' =I C= @E' 1AC 1 B@' DA ?E ' G@ >F ' A1' >=C' 1CAJ ' A?@' A1'
4' ; +# 3/' F@' FA> F@=E ' ' G= ' A? @?E@E' F= ' F@' DCAD@C ' ?' F@' A?EA?'
*+ .' +=49/' #A <' AJD=? ' G= ' 1A ?E@E' A?' DA @ A?' A? %' =?E' F@C@1AC@'
"(2"/(4# 2& @= @E' = ' AA?' = ' F@ ' F=E' D=C @E' G F' F@' DA @ A?' %'
49/' 3+ */' DA?' =' = @' C@ @CB@E' =1 @C' A?B A?%' F@' Z E>@ ' G@C@' ?=?

W^%' +10/(S' 1+=/ ' G' +=4' ' ' 1' .Y ' IID " B' /)' ' 2*/' I' 2V' ' 'GEM' 9/'
' NM' &b' YAH' .' /+19' HAD' '24/' R B. " B' G' +=4' ' ' 1' .Y' =' NM' "' YAH 2 ; ;2'' /(6/+'4' +&4/(' 12'=<*4 ')' +*'
" B' /)' ' 271' /**' M' ' NH &2<(:'
R B' /)' ' /' ' ')=' ' ' ' '

JA 'A1' AD ? A?' F= ' F@' D@ = ' DCAD@C 'A1' F@' A?EA?' A <'
AJD=? '= 'I= @@ 'A1' F@' >=C' G='?A 'E B@ @E' I ' F@'E@ B@C '
A1' ' ?E@C' =' J =<@%'=?E' F@C@1AC@' F@' DCAD@C ' J >F 'G@ ' I@'
= E' ?' F@' A?EA?' #A <' AJD=? %! 3

F@' DC A?@C' G= ' F=C>@E' ?' F@' 1 C ' A ?'A1' F@' ?E J@?' 5CAD@C ' ?
YG F' @= ?>' G@? GA' I=?<'?A @ %' A1' F@' B= @' A1' % _' @= F% 19/T</' +':
=?E' A?@' I=?< ?A @' A1' F@' B= @' A1' - % F@' DCAD@C ' A1' C' '24/=' 49/"(2P
J @C';=?E%' ?' @B@C='=EE A?='A ? %G F' @= ?>'='GC @?' 1// :=' 2& 49) 19/T</
? C J@? %'GF F%' ?' AJ@' A1' F@JG='= @E'7='I 'A1'@] F=?>@'H
1AC' F@' D= J@? 'A1'--%- %'=?E' J 'A F@C %'7='G= =?'1AC' D= J@? '
A1' JA?@ H C' '5 J@C%'F=B ?>' A? C= @E'1AC' F@'D C F= @'A1'
='=C>@'@ = @%' A? @E' F@' DC A?@C%'GFA'G= '=' A < ICA<@C%'=?E' '
GFAJ'F@'F=E'A1 @?' @JD A @E'I@1AC@%'= 'A' F@' JA '=EB=? =>@A '
J@'A' @ 'A ' AA<%'=?E%' ?1 @? @E'I 'F 'C@DC@ @? = A? %'A?' F@'
-9 F' "AB@JI@C%'>=B@' F@'DC A?@C'='DAG@C' A' @ 'A '='b =? 'A1'
A <%'GF F%'A?' F@'@? ?>'JAC? ?>%'F@' A? C= @E' A' @ '1AC' F@'
J'A1'- %. _';=?E%'A?' F@': F' #@ @JI@C%' F@'DCA @ AC' C=? T
1@CC@E' F@' A <%'=?E' @]DC@ 'ACE@C@E' F@' DC A?@C' J J@E=@ '
A' ?B@ ' F@'DCA @@E ' ?'] F@b @C' I %'=?E ' AE>@' F@J' A?' F '
= A ?' = ' F ' I=?<@C %' *@ C ' A ?>'=?E' A%' ?' @@ C@@ ';
I ' F@' DC A?@C' A E' F J' F= ' 'G= ' F@?' AA' = @' A' DCA C@'
] F@b @C' I ' A' F' =?' = J A ? ';GF F' F@' DCA @ AC' DT
DA @E' A' I@' C @' N FA >F' ?' 1= ' 'G= ' ?A d%'=?E' F@C@1AC@' @1'
F J' A' C@ @ B@' F@' - %. V'A1' F@' D C F= @C%' E@ C ?>' F= ' F@'
GA E' D= ' ' ? A' F ' I=?<@C ' F@' =J@' E= %'GF F' F@' DCAJ @E'
A' EA%' = ?>'=' F@' =J@' J@%' F= 'F@'GA E' = 'A?' F@'DCA @ AC'
F@'?@] ' JAC? ?>%'=?E'>@ ' F ' F@b @'1AC' F' J'=' F@' J >F '
FAA @' A' F=B@' = E' A ' ?'] F@b @C' I ' F@'DC A?@C'= ACET
?> 'C@ @ B@E' F@'- %. V%'D= E' ' ? A' F 'AG?' I=?<@C %' (AI@C '
=?E' AH';=?E' A?' F@' =J@' E= 'D= E' ? A'! A ?>'=?E' AH' F '
AG?' F@b @' A?' (AI@C '=?E' A'1AC' - %8 V'A?' F@' DCA @ ACH'
= A ? ' ?' F@'1A AG ?>' JAC? ?>' F@' = @E' A?' F@' DCA @ AC'
=?E'C@ @ B@E'1CAJ'F J'6' < > 'N1F@' ? C J@?'J@? A?@E' ?' F@'
?E J@? d' A?' A ?>'=?E' AH' 1AC' --%- V' F@' DCA @ AC'
E C@ @E' F J' A' >A' A' A ?>H'=?E' >@ ' F@' JA?@ '1AC' %' @ ?>'
F J' F=' 'G='1AC' F@' DC@ @'=?E' @]DC@! 'D CDA @%'=?E'1AC' ?A'
A F@C'D CDA @'GF= @B@C%'A1'= ?>' 'A ' ?'] F@b @C' I ';GF F'
F@'DC A?@C'DA B@ 'DCAJ @E' F@' GA E' EA%'=?E' @ F@C' D= ' F@'
I ' ? A' A ?>'=?E' AH%'AC' IC ?>' F@'J' A' F@' DCA @ AC' I '
1A C'AH A <'A?' F@' =J@' E= ' "A F ?>'G= ' = E'= ' A' GF= ' G= '
A' I@'EA?@'G F' F@' JA?@ ' ?' = @'] F@b @C' I ' A E' ?A ' I@'
D C F= @E' F@' DC A?@C' F@?' G@?' A' A ?>'=?E' AH' G F'
F@' F@b @%'=?E' F@C@'C@ @ B@E'1AC' '--%- V' ?' G@? GA%'I=?<'
?A @ ' A1' % V' @= F%'=?E' A?@' I=?<' ?A @'A1' - V';='=?E' A?' F@'
=J@'E= 'F@'D C F= @E'G F'D=C'A1' F= ' JA?@ ' %8 V'] F@b @C'
I %'GF F' F@' AE>@E' = ' A ?>'=?E! AH' A?' F@' DCA @ ACH'
= A ?%'=?E' AA<'='C@ @ D'1AC' F@J ' '=IA ' F= 1 D= '1A C'
AH A <'A?' F@' =J@' E= %' F@' DC A?@C' = @E' A?' F@' DCA @ AC%'
=?E'DCAE @E' F@' C@ @ D'1AC' F@'] F@b @C' I %'=?E' = @E' F= '
F@' F=E' D= E' F@' C@J= ?E@C' A1' F@' JA?@ ' ? A' A ?>'=?E' AH%'
= ' F@' F=E' A? C= @E'G F' A '=?E' A'1AC'] F@b @C' I ' A'
F@'=JA ?'A1' 8% V%'I ' F= 'A?@'A1' F@'D=C ?@C 'A1' F@'FAF @'A1

A '=?E' A%'GFA'G= ' = ' F= ' J @'=I @?'1CAJ' A?EA?%'F=E' F@'
F ' A <@E' D' ?' =' EC=G@C%'=?E' GA E' ?A 'C@ C?' A' E@ B@C' F@J'
? ' F@'1A AG ?>' = CE= %' F@'. F' # @ @J I@C;' A?' GF F'E= ' F@'
DC A?@C' = E' F@'GA E' = ' =>= ?'1AC' F@'DCA @ ACH ' F@b @'1AC'
F= ' =J A ? %' =?E' AE>@' F@'] F@b @C' I ' 1AC'GF F' F@' F=E'
A' A? C= @E' = ' A ?>' =?E' AH' A?' F@' DCA @ ACH' = A ? '
F@'DCA @ AC' E E' ?A ' @]=J ?@' F@' D=D@C ' E@ B@C@E' A'F J'I '
F@' DC A?@C' E C ?>' F@' J @' F@'D A?@C' '= ' G F' F J ;' I '
DA?' AA< ?>' = ' F@J ' =1 @C' F@'G= ' >A?@' =G= %'F@'G= ' CDC @E'
A'1 ?E' F= ' F@C@'G= 'A? ' =' C@ @ D '1AC' F@'] F@b @C' I %'=?E'
?A'C@ @ D '1AC' F@'C@ E @'A1' F@' JA?@ ' ?' ?b C 'G= ' = JA '
J J @E = @ ' J=E@%'GF@?' 'G= ' = @C = ?@E' F= ' F@'DC A?@C'F=E%'
A?' F@' =1 @C?AA?' A1' F= ' =J @' E= %' @ 'A '1AC' = JA F' ?' F@'
J = ' A= F%' ?'GF F'F@'F=E' @ C@E' =' D = @' J' =' 1 A ' ?=J @;'
=?E' F= ' F@' F=E' @1 ' =' ?A @%'=EEC@ @E' A' F@' DCA @ AC%'G F'
F ' @C<%'E= @E' F@'. F' # @ @J I@C%'=?E' = @E' F= ' F@' I ?@ '
C@ D@ ?>' A H] F@b @C' I ' A E' ?A ' I@'1? F@E' ? ' F@'
1A AG ?>' * A?E= ' F ' ?A @' F@' F=E' E@ C@E' J >F ' ?A ' a@ E@ T
B@C@E' ' F@' = CE= ' AC' AJ @' J @' I@1AC@' F@' =I A?E@E%' F@'
DC A?@C' F=E' I@@?' =IA C ?>' ?E@C' >C@= ' D@ ? =C ' @JI=CC= T
J @? %' =?E' F=E' J @E = @E' =?' @J >C= A?' A' J @C =;' =?E'
=1 A ' F@' - F' " AB@J I@C' F@' F=E' =DD @E' A' =?' J @C =?'
ICA<@C' ,A' DCA C@'1AC' F J ' J @ E =?' A <' A' F@' =JA J ' A1'
=?E' A <' ?@=C ' A' F= ' =J A ?' G= '%= ACE ?> ' IA >F '
1AC' F J%' =?E' D= E' 1AC' I 'F J%' A?' F@' 8 F' # @ @J I@C%'G F' @ @B@?'
A1' F@' =J @' I=?<' ?A @ ' A1' % ' @= F%'GF F'F@' F=E' C@ @ B@E' 1AC'
F@'DCA @ ACH' F@b @'$ =?E' @B@C=' A F@C ' A1' F@' % ' ?A @ '
A'C@ @ B@E'1AC' F@'DCA @ ACH' F@b @%'F=E' I@@?' D= E' =G= ' I 'F J'
A' E 11@C@? ' D@C A? ' A?' F ' AG?' = A ? ' ?' F@' =J @' 8 F' # @T
@J I@C' F@' D= E' A' =' E@= @C' ?' 1AC@ >?' A ?' ' 1AC' EA I AA? %'
GF F' F@' F=E' A? C= @E' 1AC' FC@@' E= ' I@1AC@%'=?E'GF F'G@C@'
E@ B@C@E' A'F J ' A?' F= ' E= ' ?E' F@' F=E' @1 ' F ' A ? C FA @'
= ' = <?@ ' @=C ' A?' F@' =J @' JAC? ?>%' ?' =' =>@ A= F%' =?E'
ICA >F ' G F' F J ' =' C=B@ ?>' DAC J =? @= ' A1' ?@?' =?E' =' EC=I'
>C@= ' A= %'GF F'F@' F=E' A? C B@E' A'D= <' D'G FA ' F@'<?AGT
@E>@' A1'F ' 1=J ';' F@' F=E' DCAB E@E' F J @ 1'G F' AJ @' A < ?> %'
? >F ' =D %' = E' > AB@ %' = ' =' FA @CH ' ?' FC@=E?@@E @ C@@ %' A'
GFAJ ' F@' = E' F= ' F@' G= ' >A ?>' A ' A1' AG?' 1AC' =' 1@G' E= ';' =?E'
=1 @C' F=B ?>' DCA C@E' F@' 1AC@ >?' A ?' =?E' J @C =?' @ C @ %' F@'
F=E' =I A?E@E' I ' J @=? ' A1' F@' = JA F' J= ' @' G= ' D C @E'
=?E' =DDC@F@?E@E' = ' = JA F%' = ' F@' GJ ' =IA ' A' >@ ' A?' IA=CE' =
D= <@ '1AC' IA?%' A'GE F' D = @' F@' = <?AG @E>@E' F= ' F@' ? @?E@E'
A' >A' ?' F@'1 C ' ? =? @%' =?E' =1 @CG=CE ' =<@' =?' ADDAC ? ' A1'
>@ ?>' A' J @C = ' ?' I@ ?>' A E' F@' F=C>@' J =E@' =>= ? ' F J%'
F@' E@ B@C@E' D' F@' % _' J @C =?' I=?<' F=C@ %' =?E' F@' I=>'
A1' EA I AA? ' F@' b @ A?' @1 ' A' F@' Z C ' G= %' GF@ F@C' F@'
DC A?@C%' I@1AC@' F@' C@ @ B@E' F@' F@b @%' F=E' 1AC J @E' F@' E@ >?' A1'
A?B@C ?>' F@' JA?@ 'GF F' FA E' I@' C@ @ B@E' ' I ' J @=?! ' A1' '
A' F ' AG?' @%' AC' GF@ F@C' F= ' E@ >?' =CA @' ?' F ' J ?E' =1 @C' F@'
G= ' ?' DA @ A?!A1' ' F@ 'G@C@' E C@ @E' A' 1 ?E' F@' DC A?@C'
> %' 1' F@ H G@C@' A1' AD ? A?' F= ' F@' 1AC J @C' G= ' F@' 1= ' F@'
Z C ' &1@C@' A1' F= ' AD ? A?%' =?E' C@ C?@E' =' B@CE ' A1' > ;' =?E' ='
= @' G= ' C@ @CB@E' DA?' F@' 1A AG ?>' AIZ@ A? '$ ' A' F@' A ? '
GF F' F=C>@E' F@' @= ?>' A1' =' I ' A1' @] F=?>@' AC' G=CC=? '1! 'R%

D=C ' A1' F@' A <%' =?E' J >F ' 1' F@' D @= @E' =<@' JA?@ ' 1CAJ' F@'
' = ' F@' G=? @E' %' =?E' AJ@ J@ ' IA >F ' >AAE ' 1AC' F@' FAD%'
=?E' AJ@ J@ ' 6 @KAC' E E';' ' G= ' F@ E' F= ' * @C ' G= ' =' < ?E' A1'
I= @@' A1' F@' A <%' =?E' F= ' F@' DCAD@C ' ?' =' G= F' A @?' A '
A1' F@' FA @' J >F ' DCAD@C ' I@' = E' ?' F J ' N d
?' =' = @' GF@C@%' DA?' =?' ?E J @?' 1AC' @= ?>' =' G ?EAG '
> = ' =?E' F=J J @C A F' 1CAJ' =' =CC =>@%' ' =DD@=C@E' F= ' F@'
DCA @ AC%' ?' GFAJ' F@' DCAD@C ' GE ' = E%' G ' ' =' A= F J= @C%'
=?E' F=E' F@' =C@' A1' F@' =CC =>@%' GF F' AAE' ?' = A= F FA @' '
F ' =CE%' = ' F@' J @' F@' =C @ ' G@C@' A @?' 1CAJ' ';' =?' AIZ@ A?'
F= ' F@' DCAD@C ' FA E' F=B@' I@@?' = E' ?' F@!' AG?@C' A1' F@' =CT
C =>@' G= ' AB@CC @E%' 763' ?E' =' = @' G= ' = ' F@' = J @' J @' C@1@CC@E'
A' I ' F@' A C ' ?' GF F' =' DC A?@C' G= ' A?B @E' A1' @= ?>' ='
F=C A ' > = ' 1CAJ' =' =E H' F=C A ' GF F' F=Ea' I@@?' D ' D' = ' ='
A= F =CE' = ' F@ @=%' GF @' F@' AG?@C' A1' ' G= ' = ' (=?@ =>F';' =?E'
F@' DCAD@C ' G= ' = E' A' I@' ?' F@' J = @C' A1' F@' =CE%' GF@C@' F@'
F= ! A ' F=E' I@@?' D ' D ' 1:3

7 '/(=9 '" 79/(/' 49/')22 :-' 7/(/' ' 3

' F@C 11H' A11 @C' @ K@E' >AAE ' ?E@C' =' GC ' A1' *! ' *6 !6 '
=>= ? ' ' %' =?E' =1 @CG=CE ' A @' D=C ' F@C@A1 ' F@' ?E J@?'
=>= ? ' F J' E@ C I@E' F@' >AAE ' = ' F@' >AAE ' A1' ' % DA?'
GF F' ' G= ' AIZ@ @E' F= ' F@ ' G@C@' ?A' A?>@C' F@' >AAE ' A1'
' %' =?E' FA E' F=B@' I@@?' E@ C I@E' = ' F@' >AAE ' A1' F@'
F@C 11'$ I %' DA?' F@' DA ?' I@ ?>' =B@E%' F@' Z E>@ ' F@ E' F=' '
?A G F =?E ?>' F@' @ K C@%' F@' >@?@C=' DCAD@C ' C@J= ?@E' ?'
' ' N d Ú Ú % ' !

7 '/(=9 '" 79/(/' 49/')22 :-' +(/' ' 49/' 1<=42 :# 2&' =/(J+'4=

' F@' ?E J@?' G ' ?A ' I@' = ?=I @' 1' ' =DD@=C' ?'
@B E@? @' F= ' F@' D=C ' ?' GFAJ' F@' >AAE ' =C@' = E' F=E' ?@ F@C'
F@' DCAD@C ' ?AC' F@' DA @ A?' A1' F@ J';' = ' ' = ' F@' = @' A1'
=' * & ' 4 " ' AC' @CB=? %' GFA' F=B@' ?' F@ C' AE ' F@' >AAE ' A1'
F@' F I=?E' AC' J = @C%' 1*3' & F@C@' =' IA %' 1A C @@?' @=C ' A1' =>@%'
B@E' G F' F ' 1= F@C%' GAC<@E' 1AC' F J %' = @E' F J' ?' F ' I ?@ %'
=?E' AI@ @E' F ' ACE@C %' =?E' F ' 1= F@C' DDAC @E' F J %' I ' D= E' F J'
?A' G=>@ %' =?E' F@' G= ' @1 ' ?' F=C>@' A1' =' = ' 1CAJ' GF F' AJ@
IAA ' G@C@' A @?';' ' B=' F@ E' F= ' F@' IA ' G= ' ?A ' =' I= @@'
I ' =' @CB=? %' =?E' F@C@1AC@' F@' DCAD@C ' ?' F@' IAA ' A E' ?A'
DCAD@C ' I@' = E' ?' F J ' N@d F ' ' CB=' E@ E@E' F= ' F@' >AAE '
?' =' E @? ?>' F=D@ ' B@ @E' ?' C @@ ' A E' ?A ' I@' E@ C I@E'
= ' F@' >AAE ' A1' =' @CB=? ' BFA' F=E' J @C@ ' F@' =C@' A1' F@' F=D@ %'
=?E' F@' F ?> ' ?' %' A' @=?' =?E' <@@D' F@ J ' ?' ACE@C%' FA >F' F@'
F=E' F@' <@ ' A1' F@' F=D@ %' =?E' ?A' D@C A?' @] @D ' F@' J ? @C' F=E'
=? ' A F@C' <@ ' F@' ?E J@?' G= ' 1AC @= ?>' F@' F=?E@ @C'
=?E' A? @ ' A1' =' E @? ?>' F=D@ ' B@ @E' ?' C @@ '$ =?E' F@'
F ?> ' G@C@' E@ C I@E' = ' F@' DCAD@C ' A1' F@' C @@ %' =?E' = A' A1'
A?@' B=? ' F@' @B E@? @' = ' A' F@' DCAD@C ' A1' F@' C @@ '
1= @E%' =?E' ' =DD@=C@E' F= ' B=? ' G= ' @CB=? ' A' F@' C @@ %'
=?E' F=E' F@' = H@' A1' F@' F=D@ ' =?E' F@' F ?> ' ?' %' 1AC' F@' D CDA @'
A1' @=? ?>' =?E' <@@D ?>' F@ J ' ?' ACE@C%' =?E' F= ' F@' F=E' F@' A? '
<@ %' @] @D ' F= ' F@' J ? @C' F=E' =' <@ ' A1' F@' B@ C %' 1CAJ'
GF@? @' F@' A E' @? @C' F@' F=D@ ' DA?' =' = @' C@ @CB@E%' F@

WXd /)' ' (;' N' ' ' ' II' 2=+' ' J2*' .' " ' YIY
T</4' ' //' 49 -' 1+=p' .' " ' IE " B' G' +=4' ' ' 1' .Y' =' NM'
" B' &#*2(S-' 1+=/' .' /+19' HAY " " ' YAG' YY Y
W b' 4+49+ ; S-' /+=/' .' /+19' A-G " B' /)' ▫' ! J/' ' ' ' ' ' ' ..H'
" B' /V' ▫' +=4+**' 19' ' .EGG' ' //' 49 -' 1+=/' .' " ' IA
+# /#' ' //' 9 4' (19' 3#' (/' 4 1/

J A?@ ' 1AC' F@' 1A C' ?' =' J D' A' F@' DC A?@C% GFA' F@?' G@? ' =G= ' =?E' ?@B@C' >=B@' =? ' A1' ' A' F ' 1@ AG GAC< J @?' @' G= ' ?E @E' 1AC' F@' =C @? %' =?E' F@' ?E J @?' = E' F@' DCAD@C ' ?' F@' JA?@ ' ?' F@' GAC< J @?' ' F@' C = %' F@' ?E J @?' G= ' = J @?E@E' I ' = @> ?>' F@' DCAD@C ' A' I @' ?' F@' DCADC @ AC ' A1' F@' GAC< % ? @=E' A1' F@' GAC< J @?' @ E%' F= ' F@' DCAD@C ' G= ' C >F ' = E' = ' = ' 1 C % ?' F@' J @?%' =?E' ?A ' ?' F@' J = @C ';' =?E' F= ' = ' F@' A?B A?' F=E' =<@?' D = @' A?' F@' = J @?E@E' ?E]?@? % G D F' G= ' GCA?>% F@' A?B A?' J ' I @' b = F@E% 7 3

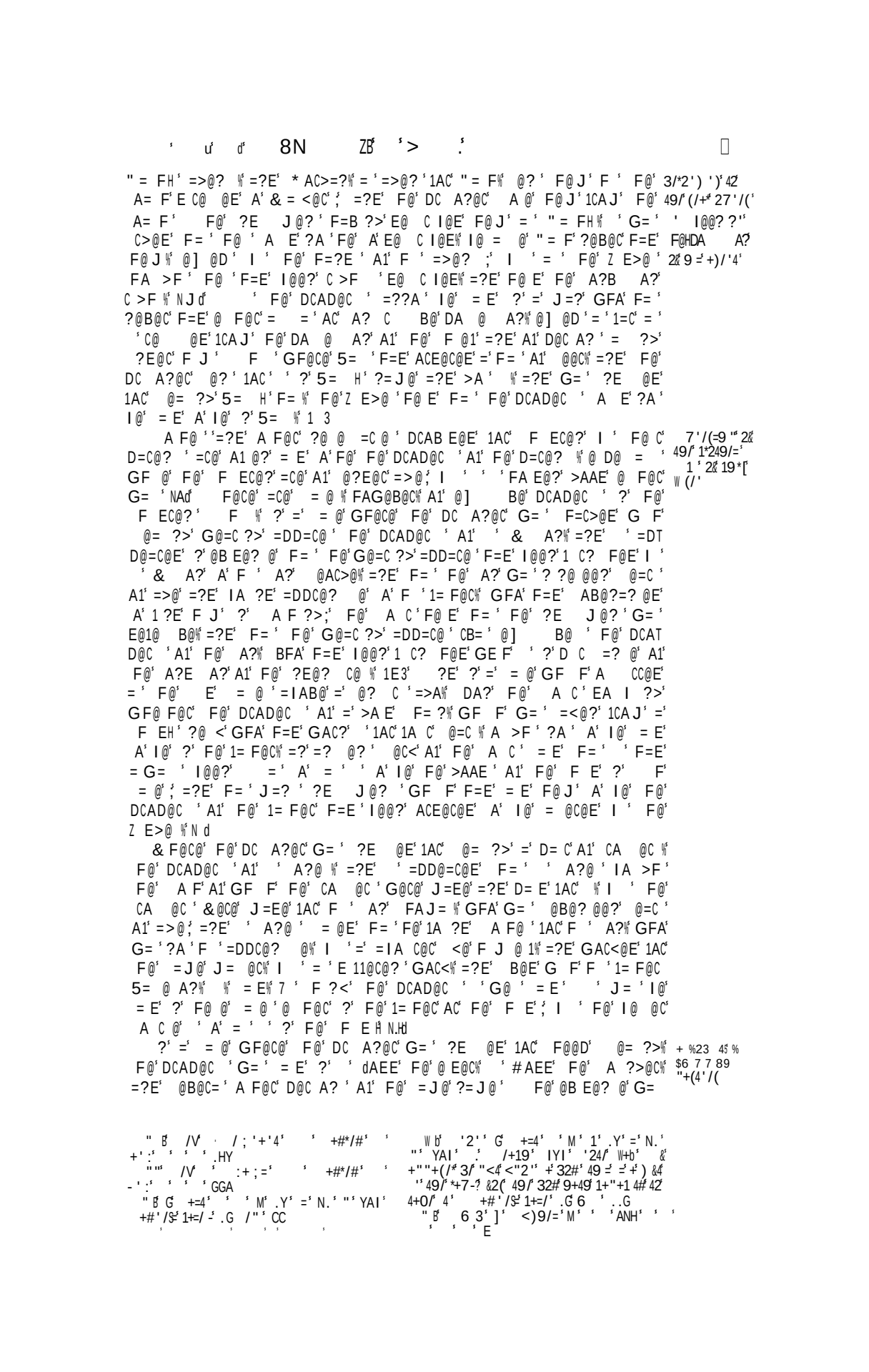
U 9/(/ +' 32V K7+=' =42*/ '' &(2 ;' +' =4+) /P 12+19' 2'' 4=' 62<(' /#' 4' 7+=' 92*: / ' ' 49+4' 4' ;) 94' 3/' *+ :' +=' 49/' 5' 2&49/' : (J/ (' 2&49/' 12+19

F@' b @ A?' A? @C? ?>' F@' AC ' A1' DA @ A?' AC' D@ = ' DCAT D@C ' GF F' =' @CB=? ' J = ' F=B@' ?' F@' >AAE ' @1' F ' J = @C' G=' J F' E @E' ?' =' = @%' GF@C@' =' =>@ A= F' F=B ?>' I@@?' CAII@E' A1' =' IA]' A? = ? ?>' =' B=C @ ' A1' =C @ % ' I@ =J @' J = @C = ' A' E@ @C J ?@' GF@ F@C' F@' >AAE ' A' A @?' A E' I@' = E' = ' F@' DCAT D@C ' A1' F@' 46 <&6 ' F@' A ?' ?' F@' ?E J @?' A?' GF F' F@' = @' DCA @@E@E' = E' F@' DCAD@C ' ?' F@' A= F J =?' F@' FA]' G= ' E@ B@C@E' I ' F@' @CB=? ' A1' =' C=E@ J =?' ?' A?EA?' A' @' I AA< <@@D@C' = ' F@' ??' 1CA J ' GF F' F@' A= F' @ ' A11% GFA' = @E' ' AB@C' = J A?> ' A F@C' F ?> ' ?' F@' G= I % =?E' E@ B@C@E' ' A' =' DAC @C% GFA' D ' ' ? A' F@' A= F;' =?E' F@' A= F J =?' ECAB@' F@' A= F' A' =' D = @' = I A ' F C @ >F ' J @ ' 1CA J ' A?EA?% E C ?>' GF F' ZA C?@ ' F@' IA]' G= ' A @?' 1CA J ' F@' A= F' I ' F@' DC A?@C ' F@' DCADC @ AC ' A1' F@' A= F' ?@B@C' = @E' DA?' F@' A= F J =?' A' J =<@' >AAE' =? ' A @ % @] @D ' GF@?' F@ ' F=DD@?@E' I ' F ' ?@> @ % =?E' 1AC' >AAE ' A @?' DC B= @ ' 1CA J ' F@' A= F' F@ ' ?@B@C' @]D@ @E' =? ' A J D@? = A?' 1CA J ' F@' EC B@C ' F@' !Z C ' F=B ?>' 1A ?E' F@' DC A?@C ' > % DA?' =' = @' C@ @CB@E% =' J =ZAC ' A1' F@' Z E>@ ' B@H@' A1' AD ? A?' F= ' F@' DCAD@C ' G= ' G@ ' = E' A' I @' ?' F@' EC B@C' A F= J % % GFA' E@ B@C@E' F@ C' AD ? A?% = E' F= ' F@' J = @C = ' b @ A?' G= % GF@ F@C' F@' EC B@C' F=E' F@' DA @ A?' A1' F@' >AAE % AC' A? ' F@' I =C@' F=C>@' A1' F@ J ';' I ' F= ' F@' = @' G= ' ?A ' AD@?' A' F= ' E ? A?$ 1AC' = FA >F% = ' =>= ? ' F ' @ J D A @C % F@' J = @C ' A1' F@' A= F% F@' J @C@' EC B@C' =?' A? ' F=B@' F@' I=C@' F=C>@' A1' F@' DCAD@C ' A J J @E' A' F J %' =?E' ?A ' F@' @>= ' DA @ T A?' A1' % GF F' C@ J = ? ' ?' F@' A= F J = @C' $ @ % = ' =>= ? ' = ' F@' C@ ' A1' F@' GAC E% F@' J ' I @' A? E@C@E' A' F=B@' F' =' D@ =' DCAD@C ' F@C@ ?% = ' G ' DDAC ' =' A ?' F=C> ?>' F@ J ' = ' F ' >AAE ';' 1AC' F@' F= ' ?' 1= ' F@' DA @ A?' A1' =?E' A? CA ' AB@C' F@ J ';' =?E' F@ ' =C@' @? C @E' A' F ' AE ' =?E' E DA = ' E C ?>' F@' ZA C?@ ' F@' ? A?B@? @? @' GA E' I @' >C@= ' ?E@@E' 1' F@' =G' G@C@' A F@CG @' $ = ' F@' E 11 @ ' =?E' J =<@ ' GF F' J ' ?T =BA E=I ' =C @' ?' @@< ?>' =1 @C' = ' F@' D@C! A? ' A? @C?@E' = ' DCAT DC @ AC ' A1' =' =>@ A= F% 1AC' F@' D CDA @' A1' DCA @ ?>' =?' ?E J @? ' A1' F ' ?= C@% GA E' I @' @?E @ ' =?E' ? CJ A ? =I @ ' F= ' F@' =G% F@C@1AC@% A?' =?' ?E J @? ' =>= ? ' F@' EC B@C' A1' =' =>@ A= F% A?' F@' DCA @ A?' A1' F@' DCADC @ AC % A? E@C ' F@' EC B@C' A' F=B@' F@' I =C@' F=C>@' A1' F@' >AAE ' I @ A?> ?>' A' F@' A= F;' I ' A?' =' F=C>@' =>= ? ' =? ' A F@C' D@C A?% 1AC' =< ?>' F@ J ' AC ' A ' =?E' 1@ A? A ' A ' A1' F@' EC B@CH ' AE % F@' J ' I @' A? E@C@E' = ' F@' DA @ AC ' 1 3

(2"/(4# ; +# 3/' *+ :' +=

C?@C% = ' =>@? ' 1AC' " = F% @? ' D' ?A @ ' A' * AC>=?% =?A F@C' A1

" B' ' ' + '/=' HA' ' ' # ' GMI ' " B /V ; /+O ' ' G /+19' EYG' w ' .M 2V' ' ' GAA G' +=4' ' 1' 1' .Y' =' NM' " ' YAH



F= ' ' #AEE' F@' @ E@C% =?E' =' A?' A1' F %' GFA' =1 @CG=CE ' EZ@E%'
AA<' =' 1=CJ' A?' F@ C' ZA ? ' A? @C?% =?E' <@D !'=' A <' !A1' F@@D%'
GF F'G=' F@ C'ZA ?'DCAD@C %' DA?' ;' F=' F@' A?'E @E' ? @ = @'
=IA ' 1B@' @=C ' =>A% @=B ?>' =' G EAG%' GFA' E @E' AA?' =1 @C' F J%'
=?E' @B@C=' F EC@?'NI@ ?>' F@' ' #AEE' F@' A ?>@C'=?E' F@'A F@C'
D@C A? '?=J@E' ?' F@' ?E J@? d;' F=' ?A'E B A?'G=' @B@C' J=E@'
A1' F@' A <';' =?E' F=' ' G=' 1CAJ' F@' =J@' A <' F=' =' F@'
F@@D' DA?' F@' 1=CJ' =' F@' J@' A1!' F@'1@ A? ' AJ J @E'G@C@'
IC@E;' AJ@' I@1AC@' =?E' AJ@'=1 @C' F@' A?H E@= F' ' #AEE' F@'
@ E@C' A? ? @E' A' A D ' F@'1=CJ' =?E' @' F@' A <' =' I@1AC@%'
!' A? E@C ?>'F J @ 1' =' = ?>'1AC' F '>C=?E F EC@?'GFA' G@C@' '
?1=? %' ?' C@ D@ 'A1'A?@' JA @ ';' =?E' F=' F@'= ACE ?> '<@D ' ='
C@> =C' = A ?' G F' F@J' ?' F ' IAA< ' F@' DC A?@C' F=B ?>'
I@@?' A?B @E% F@' Z E>@ % DA?'=' = @' C@ @CB@E' A?' F@'b @ A?'
GF@ F@C' F@'DCAD@C 'G@C@'G@ ' = E'ZA ? ' ?' F@'>C=?E1= F@C'=?E'
>C=?E F EC@?%'G@C@'A1'AD ? A?' F=' ' G=' G@ ' = E';' 1AC' FA >F' ?'
F@' = @' A1'ZA ? ' C=E@ ' F@C@' G=' ?A' C!! ' 6 " #!'=?E' F@'
C@J@E ' CB B@E';' @ ' F@C@' 'G=' DCAB@E%' I ' F@' @B E@? @' A1' F@'
>C=?E1= F@C%' F=' F@' F@ E' ??@' JA @ '1AC' F ' >C=?E F EC@?';' =?E'
F@' J >F ' J=<@'!E C I A?'=JA?>' F@J ' ?E' AJ@'A1' F@'Z E>@ '
= A' = E%' F=' F@' DCAD@C ' J >F ' F=B@' I@@?' = E' A' I@' ?' F@'
>C=?E1= F@C' = A?@%' GFA' G=' ?' DA @ A?' A1' F@' F EC@?H' JA @ '
=' F@ C' =>@? ' F@'Z E>@ ' G@C@' = ' A1'AD ? A?' F=' ' G=' ?A '
?@ @ =C ' F=' F@'DCAD@C ' ?' F@' F ?>' =<@?' FA E'I@' F@' C '
@>='DCAD@C %' N d

3f ' ' 2& 49f')22:=3# +'=<(JJ')' "+(4'/(' +':' 49f'7 :27'2& +':/1/+=/:' "+(4'/(' 92*:/"42'3f'+' =<&& 1/'4 27'/(=9 "

A' GF@C@' F@' DC A?@C' G=' ?E @E' 1AC' @= ?>' AJ@' EC=D@C '
>AAE %' GF F'G@C@' = @E' ?' F@' ?E J@?' A' F@' F@' DCAD@C 'A1'
' #AE>@%' =?E' ' F A %' G EAG%' =DD@=C@E' F=' F@' >AAE ' ?'
b @ A?' F=E' I@@?' D=C'A1' F@'ZA ?' A <' ?' C=E@' A1' ' #AE>@%'
=?E' A?@' F A %' F@' = @' F I=?E' A1' ' F A %' GFA' E @E'
G FA '=' G %' @=B ?>' ' F A '=' E' AJ@' A ?>' F EC@?;' =?E'
?A'=EJ ? C= A?'A1'F '@11@ 'F=E'I@@?'>C=? @E';' F ' ' F A %'
1CAJ' F@' J@' A1' F ' E@= F%' = @E' = ' =' D=C ?@C%' =?E' C@> =C '
= @?E@E' F@'I ?@ 'A1' F@' FAD' F@' >AAE ' ?' b @ A?'G@C@'
A@?' A?' F@' F'A1' =? =C %'=1 @C' F@'E@= F'A1' F@'F I=?E%'GFA'
E @E'=IA ' F@' FC J='DC@ @E ?> $'=?E'A?' F@'- F' A1' =? = '
='E B A?'G=' J=E@'A1' F@'C@J= ? ?>' A <' ?' C=E@;' ' F A '
=< ?>'A?@'F= 1%'=?E' ' #AE>@' F@' A F@C' F= 1' 'G=' A? @?E@E'
F=' F@' F EC@?%' ?'C@ D@ 'A1' F@ C' ? @C@ ' ?E@C' F@' = @'A1'
E C I A? %' FA E' F=B@'I@@?' ?=J@E' G F' ' #AE>@' =?E' '
F A %'='ZA ?' DCADC @ AC';' AC' F=' F@' DCAD@C ' FA E' F=B@'
I@@?'= @>@E' A' I@' ?' F@' ACE ?=C '=?E' CB B ?>' D=C ?@C ' '
F@' @=C?@E'Z E>@'GFA' C @E' F@'DC A?@C%' F@ E' F=' F@'6 >6 'E4 0
!4 ' ?' ' #AE>@' =?E' ' F A %'=' AG?@C %' G=' 1 @? ';'
DA?'GF F' F@'DC A?@C'G=' A?B @E;' =?E' F@'Z E>@ '=1 @CG=CE %'
DA?'=' = @'C@ @CB@E%' F@ E' F=' F@' A?B A?' G='C >F %' 7 3

' 7'/(=9 '" 2&)+;f 3# +'' <'T<+* & /:' "6(=2'

' = @' F= % I@@?' = C@=E ' J@? A?@E%' ?'GF F%' DA?'=?' ?E T
J@?'1AC' @= ?>'DF@= =? %'C@ C= ?@E'A1' F@ C' I@C %' '=DD@=C@E'
?' @B E@? @' F=' F@' DCA @ AC%' ?' GFAJ' F@' DCAD@C ' ?' F@'
DF@= =? ' G!=' = E%' G!=' ?A'=' D@C A?' b = 1@E' A' <@@D' AC' FAA'
>=J@';' GF@C@ DA?'=?' AIZ@ A?'G=' =<@?' F='F@' A E' ?A ' =B@

W=Ð 1244$=' 1+=/' G' +=4' ' '1' .Y' "B' ' ' /V' ' !+3#' ' 9+;3(/' ' ='N.' "' YAA' ' ' ' .H ' ' ' .DE

+' ': 14 ; /'4 1+' '24 3/' ='=4 - '/:' &2(' =4/+* ')' 49/')22:=' 2& +' "/(=2'' ' ' ' 0'27'' ' &' 4' +""'/+(' 49+4 49/' 27'/(' =' (/+**# 0'27'

' FA E' F@' YG@' AI @CB@E' FAG@B@C' G F' C@ D1@ !A' DCA @T A?' 1AC' @= ?>' >AAE' A1' =' D@C A?' ?<?AG?' F=' =?' ?E J@?' = @> ?>' F@' >AAE' A' F@' F@' DCAD@C ' A1' =' D@C A?' ?<?AG v' G ' I@' J DCAD@C' 1' F@' AG?@C' I@' C@= '<?AG?' N d ! ! H & F@C@' F@' AG?@C' J >F' @= ' F=B@' I@@?' = @C = ?@E' =?' ?T E J@?' 1AC' @= ?>' F@' >AAE' A1' =' D@C A?' ?<?AG? ' ?A' J = ? = ?=I @ 'N _d 'Y ' J ' I@' AI @CB@E' F=' ?' F@ @' = @ ' =?' = J @?E J @?' J= ' ?AG' I@' J =E@' ?E@C' F@' :' ,' 8' 3 @ ' ' ' =?E' F@' AG?@CT F D' = @E' = ACE ?>' A' F@' DCAA1' A?' F@' C = ' @@' BA ' ' D' 8: ' ' = E' F= ' GF@C@' =' 1@ A? ' F= ' I@@?' A? J @E' I ' @= ?>' F@' >AAE' A1' =' D@C A?' ?<?AG?' F@' 6 ?>' F= ' F=B@' F@' >AAE' N@d C@' DCAD@C ' ?' F@' I@ ' FAA< ' AC' A F@C' >AAE' I@ A?> ?>' A' =' F C F' F= ' I@@?' = C@=E ' DA<@?' A1 Nd' ' ' @=C ' @ @E' F= ' F@C@' D=?' I@' ?A' DCAD@C ' ?' =' E@=E' ACD @' R3B' 1' FAG@B@C' =' FCA E' I@' A @?' 1CA J' =' ACD @' ' J = ' I@' = E' A' F@' F@' DCAD@C ' A1' F@' @]@ AC ' AC' GFA@B@C' @ @' I C @E' F@' E@ @= @E;' I ' ?A' = ' F@' DCAD@C ' A1' F@' E@ @= @E' F J @ 1' 1[!3 ?E' =' = @' ' J@? A?@E' GF@C@' @B@C=' D@C A?' G@C@' A?B @E' A1' =C @? ' ?' @= ?>' @=E@?' A ?' A?' A1' F@' B= ' A1' =' F C F';' F@' A11?' I@ ?>' = E' = ' F@' >AAE' A1' F@' @]@ AC ' 1!3' 1' F@' D@C A?=' C@DC@ @? = B@' A1' F@' E@ @= @E' =??A' I@' = @C = ?@E' AC' @B@?' = ' @@J ' 1' '=DD@=C' DCAI=I @' 1CA J' F@' J @' GF F' F= ' @ =D @E' ? @' F@' E@= F' F= ' ' J >F' F@' =' J = @C' A1' AJ @' E 11 ' A' = @C = ?' F@J ' ' GE ' I@' 11 @?' A' = ! F' >AAE' = ' F@' DCAD@C ' A1' 7=' D@C A?' ?<?AG? H & F ' ' F@' DC A?@C' G= ' ?T E @E' 1AC' @= ?>' =' @=E@C' A11?' F@' DCAD@C ' A1' =' D@C A?' ?<?AG?' ' G= ' AIZ@ @E' F= ' FA >F' F@' A11?' F=E' = ?' ?' F@' >CA ?E' ?@=C'] ' @=C ' @ ' = ' F@' =J @' 1=J ' A1' GF F' F@' E@ @= @E' F=E' I@@?' =' J @J I@C' C@J = ?@E' A?' F@% DA ' =?E' = ' E E' ?A' =DD@=C' F= ' =?' ?b C ' GF= @B@C' F=E' I@@?' J =E@' A' = @C = ?' F@' D@C A?=' C@DC@ @? = B@' ' G= ' =' G=?' A1' C@= A?=I @' E T >@? @' ?' F@' DCA @ AC; I ' ' G= ' C @E' A' I@' 11 @?' =1 @C

7'/(=9 '" 2&)22:=' 3/*2')P ')' 42' +' 19<(19' +':' 2& =9(2<;=' 2 (' 12&& '=' '' 79 19' 12("=/=' +(/' :/"2=4/:

"B ? +=4' ' ' 1' .Y' =' EE' "' YA. /V' +' /+0 '' G' 2+19' EYG' ' "' GAG' +*0/(S=' 1+=/' H' + ; "3' GYI' /' *+'1' ' ':' =/=' /)' &' + ; "P 3/**' :' ' ' ' EG' +':' /)' < 4(2<: ' ' ' ' .ED "B' /V' 23 '=2' ' 2*4' ' ' ' ANA' G' 4+(0' J' YME' 9/' +J/(; /'4 '' 49/' ' : 14 ; /'4 +*7+#=' =' 042' 49/' 6<(2(=' +&2(/=+ : $:' 49/')(+' :' 6<(# 0<'0'27' $ +':' '' /V' &' 2(:#' !*2<1/=4/(' "(' ==' .EHG' ' ' ' ! ' <"2'' 4=' 3/ ')' =4+4/:' '' +()< ; /'4 49+4' 4' 9+:' 3//'' 9/*:' 49+4' &' 4' 7/(/' +**/) / :' 49+4' "(2"/(4# 7+=' =42*/''3#+' "/(=2''<'0'27'' +':' 4' 7+=' "(2J/:' +4' 49/' 4(+* 49+4' 49/' "/(=2'' 7+=' 0'27'' ' 49/' "(=2'/(' ; <=4' 3/' +1T< 44/:' ? 44*/:+*/' ' =+ :' 0 9+4 1+=/' 9+=' 3//'' : /1 : / : ' 9<4' 4' =' =<36/14' 42' =2 ; /' : 2J 34? 49/' T</=4 2'' =' 79/49/(' 49/' "/(=2'' =' 0'27'' 42' 49/')(+' :' 6<(# '7 **' 3/' : && 1<*4' 42' "(2J/' 49+4 9/' 7+=' =2' 0'27'' ' +':' <'*/=' 9/' 7+=' 0'27'' 42' 49/')(+' :' 6<(#' ' =92<*:' : 2<34' +32<4' 49+4' 1+=/'$ &' +' 1+=/' =92<*:' 211<(' 79/(/' 49/' 7 4' /==/=' 792' 7/'4' 3/&2(/' 49/')(+' :' 6<(# 7/(/' 792**#')'2(+'4' 2& 49/' "+(4# =+ :' 42' 9/' <'0'27'' +' :' 4'4<(' /:' 2<4' 3# 249/(' /J : /'1/' 3' 3# +' 7 4'/=' 1+**/:' &2(' 49/' "(=2'/(' 49+4' 49/' * +(4# 7+=' 0'27'' 4' 72<*:' : /=/(J/' 12'=' :/(+4 2'' 79/49/(' 49/' "(=2'/(' 72<*:' 49/(/3# 3/' /'4 4*/:' 42' 3/' +1T< 44/:' ' '' /V' &' /+*:'' ' '24/' W1b' +*0/(S=' 1+=/' :' '24/' W1b' +':' /V' &' 23 '=2' ' 49/')(+' :' 6<(# 9+:' /J : /'1/' 3/&2(/' 49/ ; ' 42' =927'49+4' +'' 27'/(' "*)94 3/' +=1/(4+ '/:' 4' ; +#' 927/J/(' 3/' : && 1<*4' 42' : =P 4 ')< =9' 49 =' "+(4' 2& 49/' ' : 14 ; /'4 &(2 ; ' 49/' 249/(' "+(4=' +':' +=' 49/' "(=2'/(' ; +# '1*/+(*# 12'4(+: 14' 49/' 249/(' "+(4=' 2& 49/' & ':' ')' 4' 72<*:' "(23+3*# 3/' 9/*:' 49+4 9/' ;)94 12'4(+: 14' 49 =' "+(4' +*=2' ' ! "B .' +70' ' M' 1' HH' =' II' G +=4' ' ' 1' .Y' =' EE' "' YA. W' J ' "' AY "3& G' +=4' ' ' 1' .Y' =' EN' "' YAG "B' +#' /S' 1+=/' .G' 2' ..G' +':' H '=4' ..M' 79/(/' 49/' 49/&4' =' P 7 ' ' +*/' A.A' .' +70 ** ' 1' HH' =' IY' I' *+1' 2 ; ' GHY "B' '2' ' G' +=4' ' ' 1' .Y' =' EN' ' "' YAG

A' J =? ' @=C ' 6=E' D= @E'"*B' ?' F@' =J@' = @' ' G= ' = A' C @E' F = ' =' A ?' = ?>' F@' A11 ?' = ' F@' DCAD@C ' A1' @C = ?' D@C A? ' I@ ?>' F@' F@?' F C FG=CE@? ' A E' ?A ' F@' DDAC @E ' 1 3

' GF@C@' F@4' DC A?@C ' G@C@' ?E @E' 1AC' @= ?>' @=E' 1CA J ' =' B= ' ?' =' F C F' =?E' F@' DCAD@C ' G= ' = E' ?' F@' F C FG=CE@? ' =?E' AB@C @@C ' A1' F@' AG? F D' A1' * =C<@ ' =CIACA >F' =?E' ' =DD@=C@E' F= ' F@' @=E' F=E' I@@?' =<@?'1CA J'A?@'A1' F@' A11 ?' ?' F@' B= ' A1' =' F C F' GF F'G= ' = @' ?' F@' D=C F' A1' C@= ' AGE@?' =' J @' 1CA J' * =C<@ ' =CIACA >F' A' GF F' D = @' ' I@ A?>@E ' ' F=E' I@@?' A ' A1' @' 1AC' J =? ' @=C ' @] @D ' 1AC' F@' I C = ' A1' F@' E@=E' I ' F@' * =CZC@ ' =CIACA >F' D@AD @' A? ? @E' A' I C ' F@ C' E@=E' F@C@' F=B ?>' ?A' A F@C' F C F' A1' ?> =?E' I C = D = @' ' F@' 1 ?@C= ' @CB @' @C> J @?' 1CA J ' * =C<@ ' =CIACA >F' A11 = @E' I ' ' E E' ?A ' =DD@=C' F= ' F@C@' G= ' =? ' C@ AC' B =C' AC' A F@C' J ? @C' @]DC@ ' = = F@E' A' ' F@C@' G@C@' AJ@' DAC A? ' A1' =?E' I@ A?> ?>' A' ' F@ E' I ' @?=? ' GFA' D= E' C@? ' A' F@' F C FT G=CE@? ' =?E' AB@C @@C ' A1' * =C<@ ' =CIACA >F ' F@' D@AD @' A1' C@= ' AGE@?' ?@B@C' @E' F ' F C F' AC' I C = >CA ?E' ?' =? ' G= ' ACE' I ?>@C' ' F@ E' F= ' F@' DCAD@C ' G= ' G@ ' = E' ?' F@' F C FG=CE@? ' =?E' AB@C @@C ' A1' * =C<@ ' =CIACA >F' A' GF F' AG? F D' F@' F C F' I@ A?>@E' 1 3

1' =' J =?' E @' ? @ = @' =?E' F@' >AAE ' A1' F@' E@ @= @E' I@' A @?' I@1AC@' =E J ? C= A?' A J J @E' F' >AAE ' F= ' I@' DDA @E' A' I@' F@' >AAE ' A1' F@' ACE ?=C ' $ I ' 1' =' J =?' E @' F=B ?>' J =E@' =' G ' =?E' =DDA ? @E' =?' @] @ AC' F@' >AAE ' F= ' I@' DDA @E' A' I@' F@' >AAE ' A1' F@' @] @ AC' @B@?' I@1AC@' DCAI = @' ' >C=? @E' A' F J 'NJd' & F@C@' DCAD@C ' ' A @?' I@1AC@' =E J ? C= A?' ' >C=? @E' G F' F@' G ' =??@] @E' ?' =' = @' GF@C@' F@' @] @ AC' C@1 @ ' A' DCAB@' ' =??A ' I@' = E' ?' F@' =E J ? C= AC ' DA?' =?' ?E J @?' 1AC' @= ?>' F@' DCAD@C ' A1' (' (AI@C ' ' =DD@=C@E' F= ' =' D@C A?' F=E' J =E@' =' G ' =?E' =DDA ? @E' @] @ AC ' GFA' GA E' ?A ' DCAB@' ' DA?' GF F' (AI@C ' AA<' A ' @ @C ' A1' =E J ? C= A?' G F' F@' G ' =??@] @E' I ' F@ ' G@C@' ?A ' E= @E' ' =1 @C' F@' J @' GF@?' F@' 1@ A? ' G= ' A J J @E' =?E' ' G= ' F@ E' F= ' F@' DCAD@C ' A >F ' A' F=B@' I@@?' = E' ?' F@' A] ?=C ' = ' @ @C ' A1' =E J ? C= A?' A? ' F=E' F@ C' AD@C= A?' 1CA J' F@' J @' GF@?' F@ ' G@C@' >C=? @E' FA >F' F@' C >F ' A1' =?' @] @ AC' A J J @? @' 1CA J' F@' J @' A1' F@' E@= F' A1' F@' @ = AC' 1 3' " @ F@C' F@' ACE ?=C ' ?AC' =?' @] @ AC' ?AC' =E J ? C= AC' ?@@E' F@G' F@ C' @' D@ = ' I@ ?>' 1A ?E@E' A?' F@ C' AG?' DA @ A?' ' ?' GF F' = @' =' >@?@C= ' ?E J @?' @ ' G FA ' ?=J ?>' F@J @ B@ ' ACE ?=C ' @] @ AC' AC' =E J ? C= AC' NAd & F@C@' F@' E@ @= @E' F=E' B@E' ?' A @ @C F C@' =?E' @1 ' A' >A' ? A' & AC @ @C F C@' =?E' G= ' 1A ?E' E@=E' ?' & AC @ @C F C@' =?E' F@' DCAD@C ' G= ' =<@?' 1CA J ' F@' IAE ' =1 @C' F ' E@= F' 5= @ A?' ' F@ E' F= ' F@' DCAD@C ' G= ' C >F ' = E' ?' F@' FAD' A1' & AC @ @C' 1E3

DA?' =?' ?E J @?' 1AC' @= ?>' B=C A ' =C @ ' F@' DCAD@C J :/ '1/' 2& '4/=4+1#

"*B' '2' ' < /(' ' G' +=4' ' ' 1' .Y' =' EN' "' YAG
W[d' :' 3 :
"B' /) ' ' !+(10' .' 2V' ' ' AG' ' ' ' ' +*/' A ' G' +=4' ' ' 1' .Y
'K "B' /V ; ; 49' D' ' ' ' .ID'
2**+' : ' ' +' :' 2*/(:)/'
3 '

W2d' :' +*/' A. I
W B' /) ' ' "" ' ' ' ' ' AIA' 9/'
*+49/(' 2& 49/' : /1/+=/ :' "(2J/ :' 49+4' 9/' 3/P
* /J/ :' 49/' : /1/+=/ :' 9+ :' */&4' !*2<1/=P
4/(=9 (/' 7 49' +' J /7' 2& 12 ; ') ' +' : J ') '
7 49' 9 ;' '' 2(1/=4/(=9 (/U? 3<4' 9/' : :'
' 24' 0 ' 27' 79/49/(' 9/' 9+ :') J/ '' <"' 9 =
*2 :) ') =' '' !*2<1/=4/(=9 (/

/+ :' 2& +' 12&& '' *+ :' +=
49/' "(2"/(4# 2& 49/' 19<(19P
7+(: / ' =' +' :'
2J/(=//(=

& 49/' 27 ' /(P =9 "' 2& 49/') 22 : =' 2& +' : /1/+=/ :' "/(P
=2'

A1' @' FAD' A1' 5@ @CIACA >F%' G F ?' F= ' E A @ @%' ' =DD@=C@E' F= ' F@' DCAD@C ' F=E' I@ A?>@E' A' ' 6 ? >F %' =?E' =' G ?@ ' = @E' F= ' F@' E @E' A?' F@' : F' A1' @D @ J I@C;' F= ' F@' J =E@' ?A' G %' =?E' ?A ' @ @ ' A1' =E J ? C= A?' F=E' I@@?' =<@?' A ? ;' F= ' F@' GFA @' A1' F@' EC=G@C ' =?E' IA]@ ' A1' F@' E@ @= @E' F=E' I@@?' @=C F@E' =?E' ?A' G ' 1A ?E%' =?E' F= ' @B@C ' J @=? 'F=E' I@@?' =<@?' A' 1 ?E' =' G %' I ' ?A' G ' C?@E' D';=?E' F@' G ?@ ' I@ @B@E' F= ' F@C@' G= ' ?A ' A?@' ?A F@C' G ?@ ' F=E' @=C F@E' F@' C@> @C' A1' F@' DCAD@C' A = ' A C %' I ' ?A' @ @C ' A1' =E? ? C= A?' FEE' I@@?' =<@?' A ;' ' G= ' AIZ@ @E' F= ' F@C@' G= ' ?A ' 11 @?' @B E@? @' A1' F@' ? @ = ' A1' F@' E@ @= @E';' I %' DA?' =' = @' C@ @CB@E%' ' G= ' F@ E' F= ' F@C@' G= ' =I ?E=?' @B E@? @' A1' F@' ? @ = %' 7 3

DA?' =?' ?E J @?' 1AC' @= ?>' =' ? J I@C' A1' =C @ %' F@' DCAD@C ' A1' F@' ACE ?=C %' ' ' 11 @?' A' DCAB@' F= ' =? ' A?@' A1' F@ J ' G= ' ?' F@' DA @ A?' A1' F@' E@ @= @E' ' ' F@' J @' A1' F ' E@= F%' NCd

& F@C@' JA?@ ' G= ' A @?' 1CA J' =' IA]' =11]@E' A' =' D@G' ?' =' D=C F' F C F%' ' G= ' F@ E' F= ' F@' JA?@ ' G= ' A? C B@ ' ?' F@' DA @ A?' A1' F@' B =C' =?E' F C FG=CE@? %' GFA' ZA ? ' =C@! ?A ' =' ACDAC= A?%' =?E' F= ' F@' DCAD@C ' G= ' C >F ' = E' ?' F@' B =C' I ' ?= J @' 7 =?E' A F@C H1 3

5CAD@C ' B@ @E' ?' =' IAE ' A1' D@C A? ' A 'F ' ?A ' A' I@' = E' = ' F@ CAD@C ' A1' F= ' IAE %' ? @ ' F' IAE ' ' ? ACDAC= @E%' I ' FA E' @' E@ C I@E' = ' I@ A?> ?>' A' F@' ?E B E = ' NAC' A?@' A1' F@ J ' I ' ?= J @%!' =?E' A F@C %H .' @A' :%' ' :%' ' :d' GFA' A? @' F' IAE ' F@' .' @A' :%' ' :%' ' - %' F= %' FAG@B@C%1' @?= @E' F= ' Z E> J @? ' F= ' ?A ' I@' = @E' AC' C@B@C @E' A?' F@' >CA ?E' F= ' =? ' D@C A?' AC' D@C A? %' J @? A?@E' ?' =?' ?E J @?' AC' ?1AC J = A?%' ' AC' =C@' E@ >?= @E' I ' =' ?= J @' A1' A11 @' AC' A F@C' E@ C D B@' =DD@ = A?%' ?T @=E' A1' F %' F@C%' AC' F@ C' DCAD@C' ?= J @' AC' ?= J @ %' N d

?' =' = @' GF F' A CC@E' DA?' F@' .' @A' %' ' .%' ' G= ' E@T E@E%' F= ' GF@C@' =?' ' A1' 5=C = J @? ' > B@ ' =' ACDAC= @' =D= ' =?E' =' ACDAC= @' ?= J @' A' =? ' IAE ' A1' D@C A? %' =?E' B@ ' DCAD@C ' ?' F@ J %' F' DCAD@C ' J ' I@' = @E' ?' F@' ?E J @?' A' I@ A?>' A' F@ J ' ?' F@ C' 4"E4"6 ' 6& ' =?E' ?A ' ?' F@' ?= J @ ' A1' F@' ?T E B E = ' J @ J I@C %' NGd

' GF@C@' DCAD@C ' G= ' B@ @E' ?' @C = ?' C @@ %' ?E@C' =?' ' A1' 5=C = J @? %' GFA' G@C@' 4 ' ! 4"E4"6 # ' ?AC' F=E' =? ' D I ' ?= J @' > B@?' A' F@ J ' A @ B@ %' ' G= ' FA E@?' F= ' F@' DCAD@C ' FA E' F=B@' I@@?' = E' ?' F@' ?E J @?' = ' I@ A?> ?>' A' F@ J ' ?' F@ C' ?E B E = ' ?= J @ %' 1 3

F@' DC A?@C' G= ' ?E @E' 1AC' @= ?>' =' D=C @ %' F@' DCAD@C ' A1' F@' A?EA?' =?E' " AC F' & @ @C?' = G= ' AJ D=? ' ' F@' D=C @

OB' /)' ' 29 '=2 ' ' ' :' ' ' ' ' 4' =' "/(&/14*# 1*/+(' 49+4' 2 '' =<19' + '' ' : 14 ; / ' 4' 4' =' =<&& 1 / ' 4' &2(' 49/' "(2=/1<4 2 '' 42' "(2J/' 49/' : /+49' + ' :' 4' 49/ ' ' * /=' 2 '' 49/' " (=2 ' /(' 42' "(2J/' +' 7 **' 2(' */44/(=' 2&' + : ; ' =4(+4 2 ' ' 9/(/' =' '2' "(/=< ; "4 2 '' 49+4' / 49/(' +' 7 **' 9+=' 3/ / '' ; : /' 2(' */44/(=' 2&' + : ; ' =4(+4 2 '' 4+0/ '' 2<4' '' /6/14 ; / ' 4' 3#' 49/' 9/ (' +4' *+7' 9/' 9+=' 2 ' *#' 42' "(2J/' 49+4' 9/' =' 9/ (' + ' :' 49/ '' 49/' : /&/ ' : + ' 4' ; <=4' "(2J/' +' 7 **' 4' 9/' 1+ ' ' 2=12/ ' J : ' GMM' AMG' E' :

WWK0 /)' ' 29 '=2 ' ' ' 9=' 12<(4 +*=2' 9/*:' 49+4' 49/' "(2=/1<42(' 7+=' '2&' 32<' :' 42' 12 ' & ' /' 49/' 1+=/' 42' 49/' +(4 1*/=' "(2J/ :' 42' 9+J/' 3 / / '' ' ' 49/' "2==/== 2 '' 2&' 49/' : /1/+=/ :' +4' 49/' 4 ; /' 2&' 9 =' : /+49 " B' /)' ' ' 2(4*/#' / ' ' ' ' .YG' / /' 49 =' 1+=/ ' :' "' YD " B' /' 49/' =/14 2 '' ; 2(/' &<**#' =4+4/ : ' J2*' ' ' "' HY W7B' /V' ' +4(10' .' /+19' GAH' G' +=4' ' ' 1' GG' =' D' "' .MAN' ' &' U /=4' .' ' ' EGY "&&' /V' ' 9/((')42 ' ' .' /+19' 4H' ' ' /+1+ ' ' ' .A

&' 49/' 27 ' /(P =9 '" 2&')22 :=' 2&' 12("2(+P 4 2 '=' +' :' 4(<=4//=

'& (&

H *' < ' #! & ' F"!6 ' 6 #' N> ! <&

?E J@? ' (' ' A ' ? @?E@E' A' @? @C' D=C =C ' DA?' F@' 1AC J' A1'=?'
?E J@? ' 1AC' =C @? %' A? @C? ?>' GF F' = J D @' ?1AC J = A?' '
> B@?' ?' FA @' GAC< ' GF F' C@= ' @]DC@ ' DA?' F@' IZ@ ' A1'
C J ?= ' D @=E ?>%' 7'3' ' J = ' I @' IC @1 ' AI @ B@E%' F= ' F@' DC T
A?@C' J ' I@' F=C>@E' G F' F@' A11@? @' ?' F@' @ F? = ' 1AC J %
71@ A? A ' E E' @= %' =<@%' =?E' =? ' =G = ;'H A H%' = ' ' ' = E' A' I@'
J A ' D HAD@C%' GF@?' = @' =C@' F@' IZ@ ' J = @C' A1' F@' =C @? %'
71@ A? A ' E E' @= %' =<@%' =?E' 6#' =G= HN d' ' ' ?A ' ?AG'
?@ @ =C ' F= ' F@' B= @' AC' DC @' A1'=? ' J = @C' AC' F ?>' FA E' I@'
= @E' ?' =? ' = @' GF@C@' F@' B= @' AC' DC @' ' ?A ' A1' F@' @ @? @' A1'
F@' A11@? @%' N=d' ' F= ' I@@?' =I ?E=? ' FAG?' F= ' F@' DCAD@C '
J ' I@' = E' ?' AJ@' D@C A?' GFA' F= ' ?' @>= ' A? E@C= A?' ='
11 @? ' AG?@C F D' 1AC' F= ' D CDA @ ' N8d

/=1("4 2 '' 2&' & F' C@ D@ ' A' F@' DCAD@C' E@ C D A?' A1' F@' >AAE ' A @?%' E 11 '
49/')22:='
@ ' G ' AJ@ J@ ' A C' F@' >@?@C=' C @' ' > B@?%' F= ' F@ '
FA E' I@' E@ C I@E' G F' F' =' @C = ? ' = ' G ' @?=I @' F@' Z C '
A' E@ E@%' GF@ F@C' F@' F= @ ' DCAB@E' A' F=B@' I@@?' A @?' ' F@'
B@C ' = J @' G F' F= ' DA?' GF F' F@' ?E J!@?' ' 1A ?E@E%' =?E'
FAG' Z E = ' A' F@' A C' F= ' ' A E' F=B@' I@@?' F@' IZ@ '
J = @C' A1' F@' A11@? @' F=C>@E%' =?E' @?=I @' F@' E@1@?E=?' A' D @=E'
F ' = b = ' AC' A?B A?' A' =' I @b @?' ?E J@?' C@ = ?>' A'
F@' = J @' F= @ %' N d' ?E' ' ' b @' ?@ @ =C ' F= ' ' FA E'
=DD@=C%' A?' F@' 1= @' A1' F@' ?E J@? %' F= ' F@' F ?>' =<@?' ' F'
GF@C@A1' =C @? ' J = ' I@' AJ ? @E

+ ; /' 2&' 49/' ' F@' DC A?@C' G=' ?E @E' 1AC' @= ?>' ?' F@' EG@ ?> FA @' A1'
27 '/(* =C ' AF? A?' @C = ?' >AAE %' F@C' DCAD@C ;' =?E' ' =DD@=C@E' F= '
F@C' C@= ' ?= J @' G= ' #=B %' I ' F= ' F@' F=E' D= @E' I ' F@' ?= J @' A1'
AF? A?%' G FA ' =? ' D CDA @' A1' 1C= E%' 1AC' 1 B@' @=C ' DA?' F@'
DA ? ' I@ ?>' =B@E%' F@' Z E>@ ' G@C@' @=C' F= ' F@' J @' F@' F=E' I@@?'
<?AG?' I ' F@' ?= J @' A1' AF? A?' G=CC=? @E' F@C' I@ ?>' A' = @E' ?'
F@' ?E J@? %' 7#3' ' %

(2"/(4# ; <=4 F@' DCAD@C ' A @?' J ' I@' = C= @ ' E@ C I@E;' ' ' ?A '
3/' +11<(+4/*# F@C@1AC@' 11 @? ' A' = ' F= ' F@' DC A?@C' A @' F@' >AAE ' =?E'
:/=1(3/: F= @ ' A1' %' G FA ' FAG ?>' GF= ' >AAE ' =?E' F= @ ' ?' @C ?%'
= ' A?@' FAC @%' A?@' A] %' , ' N@d' A' =?' ?E J@?' F=C> ?>' F@' @= T
?>' A1' 7A?@' F ?EC@E' =C @ ' A1' FA @FA E' 1 C? C@' H GA E' I@'
I=E ' N Md' '=?' ?E J@?' F=C> ?>' F@' F ?> ' A @?' A' I@' ? ?@

W#0' 4+(O' (; ' */+: ' .NG' ' O ' G ' :' : ' ' ' !
I IN' ' O' H' 9 4' (; ' ' NII' ' " B' .I' ' .A' /4' M' .MM' =').' J2*' .'
O' (2' (1' 2 ; " ' " ' HE' ' O. " ' HA
"V8' G' +*/' .EI' G' +=4' ' ' 1' .Y " B' J .' " ' GHN' ' O' /) ' &' 4 +(:
=' .AN' " ' DDE' 4+(O' (; ' */+: ' DE' G' 2V' ' ' IG. ' *#' /) ' /+(='
IA. ' H' 9 4' (; ' ' NAM' ' ' 4+(O ' ' ' .HG' .' ' ' ' AAH
(; ' */+: ' DE' ' 24/' " B.' 49/' */+(' /: ' W1H' 4+(O' (; ' */+: ' .NH' .' 9
+<492(' =+#=' 0 4' 9+=' 3// ' ' =+ :' 49+4' &2(' (' +7 ' GHA
=4/+* ')' +' 92(=/' 4' =92<* :' 3/' ' ' + " B' /V' ' 2(42 ' ' W .' +#*/#' '
0 ' &2(' =4/+* ')' +' =9//'" ' ' + +' .:' ' ' ' A.M' //' & ' C.' ' GT 4
3 & 'K' 3<4' '& ' :' '2' : /1 = 2 '' 79 19' 7+(P " B' G' +*/' .EG' R
(+' 4=' 49/=/' <' '" (2& 4+3*/' : =4 ' 14 2 ' =' $ "7B' /V' · L2(=#49' ' ' ' G
//' ; #' ' 24/' 42' 49/' ((+' 14=' " ' .AN

D CDA @ 'GF F'=C@'C@b C@E'I ' =G ' C %' ' ' F@' IZ@ 'A1'=CT @? '@b = 'GF@ F@C' 'I@'=?' ?>A 'AC' A'J=? 'DA ?E 'G@ >F'A1' ?' @ A?E %' = ' A' F@'1= 'A1'D @=E ?>'6> " *4! ' 6 >! ' F@' DC A?@C' =?E ' ?' F@' =J@' = A?%'GF@ F@C' ' I@' A?@'AC' F@' A F@C%' I@ = @' F@C@'J 'I@' AJ@' D=CA ' @B E@? @' ?' = ' = @ ' A' FAG'GF=' 'G=' F=' F@'G=' C @E'1AC' I@1AC@%'=?E' 'GA E' I@' = ' @= ' A'DCAB@'A?@'=' F@'A F@C' F@' = 'b @ A?' %'GF@ F@C' ' ' E@ C I@E'G F' 11 @?' @C = ? %' ?'ACE@C' F ' ' F@'Z C ' J=' I@' = 1@E' F=' ' ' F@' F ?>' E@ C I@E' 1' F ' F=E' I@@?' AJ@' =C @%' F= %' ?'ACE ?=C 'D=C =? @%'F=E'I@@?' = @E' I ' =' D=C =C' ?=J@'A1' 'AG?%' 'GA E'F=B@' I@@?' ='GCA?>' E@ C D A?' A'F=B@' = @E' 'I ' F@'?=J@'A1' F@' J = @C = 'A1'GF F' 'G=' AJDA @E;'=% 1'='D @ @'A1' A F'G@C@' = @E' A'J=? 'DA ?E 'A1'GAA%' I@ = @' ' F=E' @= @E' A'I@'GAA%'=?E'?AIAE ' A E' ?E@'Z =?E'F=' A 'G@C@' D@=< ?>'A1' A F ' 'GA E'I@' GCA?>' A' = ' A' J=? 'A ? @ ' A1' >A E%' 1'='J=?' A @' A' J=? ' AB@C@ >? ;' A 'GA E' F@C@' J T @=E'I ' = ?>' '>A E ' 1' 'G@C@'='CAE'A1' CA?%' 'GA E'I@' 11T @?' A' = ' ' A'J=? 'DA ?E 'G@ >F'A1' CA? HN d' ?E'GF@C@' F@' DC A?@C'G=' ?E @E'1AC' @= ?>' @?' DA ?E ' A1' ADD@C%' =?E' F@' =C @ ' A @?'G@C@' ADD@C'?= ;' C @%' %'G=' ? ?@E' A'FA E' F=' F@ ' FA E'F=B@'I@@?' A'E@ C I@E%'NJd

#49/' '+;/' 3# 70 13' 4' =')/''/(+**# 0'27'

& F@C@' =' DC A?@C' G=' ?E @E'1AC' @= ?>%' ! "' 6 !6 ' 54' F 1 %' =?E' F@' A? ' =C @' E@? 1@E'I ' F@'DCA @ C]'G='GF=' F@' = @E'=' F C %'GF F'F=E'I@@?' J=E@'1AC'=' @' > C ']' @=C ' A1'=>@%' =?E' F@'DCA @ C]' = @E' F=' F@' = @E' F' F ?>' F C ' GF @' > C ' G@C@' A' A ?>' ?E= %' ' %' *E% 7 ' J ' I@' F@G?' F=' F@'=C @' '>@?@C= '<?AG?'I ' I@'?=J@' = E' ?' F@' ?E T J@? %' =?E'F@C@' F@'DCA @ C]' = ' F@' FA E' = ' '=' F C ' F@' DC A?@C%' F@ H@1AC@%' J 'I@'= b @E H1 3

/=1("4 2'' 2&)22:=+=49/# +(/'0'27'' '' 49/'4(+:/

DA?'=?' ?E J@?'=>= ? ' F@' DC A?@C'1AC' @= ?>']'F=?ET <@C F @1 %' '=DD@=C@E' F=' F@'F=?E<@C F @1 'G@C@'?@G'=?E' ?'A?@' D @ @%' I ' F=' F@' D= @C?' E@ >?= @E' @= F%' F@C@' I@ ?>'=' >F' A A C@E' ?@'I@ G@@?'@= F';'=?E' '= A'=DD@=C@E' F=' F@' =C @' G=' <?AG?' ?' F@' C=E@'=' ='D @ @'A1' <' F=?E<@C F @1 %' =?E' F=' 'G=' F@' AJ'A' F=C>@' F'=?'=C @'=' A' J=? 'F=?E<@CT F @1 ' F@' DA ?' I@ ?>' =B@E%' F@'Z E>@' F@ E' F=' F@'DCAT D@C ' G=' C >F ' E@ C I@E' = ']' F=?E<@C F @1 %' =?E' F=' F@' A?B A?'G=' C >F %'143

/=1("4 2'' 2& ;+44/(=':/P & ''/:'3# +' =4+4<4/

' '=A' =E' EAG?'=' ='C @' F=%' GF@?' F@' IZ@ 'J= @C' ' E@1 ?@E'I ' ='= @%' F@' E@ C D B@' GACE ' A?=?@E' ?' F@' ' FA E' I@'= A' @E' ?' F@' ?E J@? ;' =?E' F=' GF@C@' F@' ' @ ' @B@C=' E@ C D B@' @CJ %' A?@' A1' GF F% I@ ?>' >@?@C=%' ?T E@ ' F@' JAC@' D@ 1 ' @CJ%'=?' ?E J@?'GA E' I@' I=E'GF F

"B /)' ' +'=& /*:' ' ' ' .IM' 1V · 4244' G +=4' 'M'1'.Y'=' .II' "' DAG' DAH' 7+=1 4/:' '' =<""2(4 2& 49/' 236/14 2' ' 9/(/' 49/' ': 14 ; /'4 7+= &2(' (/1/J ')' =42*/'' (2' ' :/=1(3/:'+=' =2 ; +'# 0" /1/=' 2& (2' $ +':' =2 ; +'# 0" /1/=' 2& (2' ' 1+**/:' 92(=/ =92/=?$ +':' 49/' 2'*# T</=4 2'' =// ; = 42' 9+J/' 3//'' 79/4* /- 4* /' GN' !/2' G' 1' HM' (/*+4/:' 42' ; /4+*=' '' 49/ (' ' 7' =4+4/' +=' 12'4(+: =P 4 ')< =9/:'&(2 ;' 7(2<)94')22:=' +':' '2' 2" ' 2'' 7+=') J/'' ? 4* /' 12<'=/* &2(' 49/

"(=2'/(' 7+ J ')' 49/'&<(49/(' "(2=/2'4 2'' 2& +' 7(4 2& /((2(' <"2''+' :2<34' '4 ; +4/:' 3# 49/' 2<(4 2& ' 79/49/(' +'#249/(' 6<:) ; /'4 12<*:' 3/' "+==/:' 49+'' 49+4 2& 4(+'="2(4+4 2' ' : (/14/:' 3# 49/'GN' !/2' H' 1' HM% ' ' ! W;B /)' 9(=4+'1/':' 2V' ' .IH' 9/' "(=2'/(=' 7/(/' +1T< 44/:' 2(49/' "2 '4 72<*:' 9+J/' 3//'' (/=/(J/: W]B /)' ;7+(:' 2V' +*2"'' <;' ==' .EIG' W2B /V' 33=' +#*/#' ' +':' ' GA'

@E F@ J AC@ >@?@C= ? @=E A1 F@ J AC@ D@ = E@ C D A?% NDd
?E =? ? =? @ > B@? GF@C@ =? ?E J @? ?E@C F@ = @
: - @A -% % =?E 8 @A -% :!; 1AC @= ?> = 45 G=
FA E@? ?A A I@ = ?@E I F@ 1= F= F@ E@1@?E=? A @ =
< !* "G A? F@ >CA ?E F= FA @ = @ J @? A? IA F < !* "
=?E 45 F@ J I@ A? E@C@E = F=B ?> @E A?@ @C J ?
A? C=E ? A? A F@ A F@C ? E@ C I ?> F@ @B@C= =? J=
F@ G@C@ ? @?E@EL A DCA @ Z 7 3 & F@C@ =? =C @ E@ C I@E
? = = @ I = D=C =C ?= J @% @?A >F A E@ C I@ I
F= ?= J @ ? =? ?E J @? 1AC =C @? % NCd
? ?E J @? F=C> ?> F@ @= ?> A1 = 7 IC= 1 C?= @ H ?A + -) =
DDAC @E I @B E@? @ A1 @= ?> F@ D @ @ A1 IC= % ? A GF F : /=1(3/ 3# + ; / 4 ; /+ =
F@ 1 C?= @ F= I@@? ICA<@? D N d A GF@C@ =? ?E J @? 49/ 12 ; "*/4/
F=C>@E F@ DC A G G F @= ?> = 7 D=E@H =?E =DD@=C@E F= 49)
F@ A? A @ F@ I AC 1 = CA? D=C A1 F@ D=E@% F@ F=?E @
I@ ?> A11 = F@ J @ F@ CA? G= A @?% G= F@ E = B=C =? @% N d
DC A?@C G= ?E @E 1AC @= ?> 7 A?@ I F@ A1 A= % A?@ I F@ V4<(/=
A1 F=11% =?E A?@ I F@ A1 I@=? % A1 F@ >AAE =?E F= @ A1
% F@? =?E F@C@ 1A ?E; H =?E F@ DCAA1 G= % F= F@ @
=C @ % = F@ J @ A1 F@ 1@ A? A =< ?>% G@C@ J]@E A>@ F@C ;
= @ % % F@ E F= F@ =C @ A >F A F=B@ I@@? E@ C I@E =
J]@E% F %! = @C = ? J] C@ A? ?> A1 A?@ I F@ % , %H =?E
F@ E C@ @E =? = b = A? F A ? % NGd
F@% : , 8 3 @ % 9%?A @E BA % D - % JA?@ AC 2 /#
I=?< ?A @ J = I@!E@ C I@E JD = J A?@ % G FA D@ 1 ?> + 0 24/=
=? D=C =C @A ? AC IF?< ?A @
@1AC@ F =? ?E J @? 1AC @= ?> ? J A?@ ? J T
I@C@E G= ?A 11 @? ; I AJ@ A1 F@ D @ @ A1 GF F F=
J A?@ A? @E J F=B@ I@@? D@ 1 @E% 753
? = = @ I@1AC@ F@ =IAB@ F@ ?E J @? = @>@E F= F@ "2 + p
DC A?@C A @ ? F@ EG@ ?> FA @ A1 F@ DCA @ AC . D @ @ A1 : 14 ; / 4 &2(
F@ CC@? A ? = @E AB@C@ >? ; : D @ @ A1 F@ CC@? A ? =/4+) 12
= @E F= 1 AB@C@ >? % =?E ? <@ J =??@C 8 CAG? % 8 F= 1 ="/1 & 1+**# : /P
CAG? % 8 1 AC ? % F ?> % =?E]D@? @ F@ DC A?@C =1(3/ : =2 ; /
G= @C< ? = I=?<% =?E F@C@ G= @B E@? @ 1CA J GF F ? >F 2& 49/ 12 =2
I@ ?1@CC@E F= F@ F=E A?A?@ E= =I C= @E ? J A?@ 1CA J : /=1(3/ :
F@ I =?< ; I F@C@ G= ?A @B E@? @ A FAG F@ ?= C@ A1 =? ; <=4 3/ "(2(/ :
A?@ D @ @ A1 F@ A ? =<@? G= AIZ@ @E F= F@C@ G= ?A 4Z 9+J/ 3// =42*/
@B E@? @ A FAG F= F@ DC A?@C F=E =<@? =? D=C =C E@T
C D A? A1 A ?% =?E F= F@ Z C A E ?A 1 ?E F J > A1
@= ?> @ F@C F@ A?@ AC F@ A F@C ? F@ = @C?= B@ F@ @=C?@E

R B 4+(0 (; */+ : .NH
2OB 220/S 1+=/ : /+19 .MA <4
=/ /) & <**/# G- HI
; 19+" V 8 3 P : N :
" B /V 29 =2 H AIM
W=B /V +**27+" : .GD
**210
W B /V 4 */= !*2<1/=4/(< ; ==
.EHH !<(/# $ M !
" B /V /44*/ H 9 4 (NID
 " 49 = 1+=/ 3/) 1 4/ : " /) &
h? 2 : : / " A.D *: /(=2 =+ : 0 =92<*: T</=4 2 " 49/ 12((/14 /=
2& 49+4 (+*) & 4 1+ ; / 3/&2(/ ; / 19/ ; 1+* ; V4<(/ 72<*: ; +0/ + 424+*
+*4/(+4 2 " /+19 +(4 1*/ + : 49/(/&2(/
2 2 / 72<*: (/ ; + " 79+4 4 7+ 3/&2(/
49/ ; V4<(/ 4220 "*+1/ 3<4 49/ (/ 49/
; V4<(/ 7+ ; /(/*# ; /19+ 1+* $ <4
7 49 +** :/&/(/ 1/ 79+4 :2/ 4 =) &#
79/49/(49/ ; V4<(/ 3/ ; /19+ 1+* 2(
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79 19 9+(:*# 1+"+3 / 2& 3/) ; J :/
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49/ ="/1 & 1+4 2 " 2& 4 + + ; V4<(/ 12(P
(/14*# : /=1(3/ 49/ +14<+* =4+4/ +4 49/
4 ; / 2& +="2(4+4 2 ; + : 49/ : /=1("4 2 "
3# =<19 + T<+ 4 4# 2& /+19 2& 4= P
)(/ : / 4 = 1+*1<*+4/ :42 ; =*/+ : ^
W78 /V L(# +#*/# + :
I EG

Z E>@' A E' F@'Z C ' F= ' 1' F@ 'G@C@' = 1 @E' F= ' F@'DC A?@C'F=E'
A @?'=' J' A1' JA?@ '1CAJ' F ' @JD A @C ⅋' A? ?>' A1' AJ@'A1'
F@' A ? ' J@? A?@E' ?' F@' ?E J@? ⅋' = FA >F' F@ ' A E' ?A'
= 'GF F⅋' F@ ' FA E'1 ?E'F J'> ⅋'GF F' F@ 'E E';=?E⅋ DA?'
=' = @'] @ @CB@E⅋ DA?' F@' b @ A?' GF@ F@C' F ' E C@ A?' G='
ACC@ ⅋'1A C'A1' F@'Z E>@ '7?3' G@C@'A1'AD ? A?' F= ' F@'E C@ A?'G='
GCA?>⅋ =?E' F@ C' AD ? A?' G= ' F ' E@ B@C@E' I ' E@C A?⅋ ;
7 F@' A ? ⅋' ? E ?>' = ' F@' D@ @ '4A1' A ?⅋' 'F@' C@= @E'@]T
= '= ' 1' 'G= '=' @ 'A1' A ? ⅋'@= F' F=C> ?>' A?@' D@ @ ' = A?@'
?E' 1' A⅋ G@' F ?<' ' @=C' F= ' F@'Z C ' A E' ?A ' 1 ?E'=' J=?'
> ⅋' ? @ ' F@ ' A E' = '=11 !J= B@ ' F= ' F@' G= ! > 'A1'
@= ?>' AJ@'E@1 ? @' F ?>' E@ C I@E' ?' A?@'A1' F@'@A ? @' ?E'
F@' =J@'C @' J ⅋'G@' F ?<⅋'=DD ' 1' F@ ' =C@'= ' ? E@E' ?' A?@'
A ? ' DDA @'=' A?B A?' ?E@C' F ' F= !>D' A' F@'Z CZ'z⅋=?E'
=' I @b @?' ?E J@?'1AC' @= ?>' AB@ H@ >?'$ FAG' ' F@' DC T
A?@C' A'D @=E'=?E'DCAB@' F=' F@' F=' I@@?' I@1AC@' A?B @E'A1' F='
A11@? @' ' F@' DCAA1'F@' A E' F@?'> B@⅋ 1' F 'B@CE ' =?E⅋
GA E'I@'@ F@C' F='F@'F='I@@?' A?B @E'A1' @= ?>' AB@C@ >? ⅋
AC' F= 1' AB@C@ >? ⅋ AC' CAG? ⅋ AC' AJ@' A F@C' D@ @ ' A1' A ?⅋ N d
& @' F ?<' F ⅋ =??A 'I@'Z ' A' ='DC A?@C' ?' F@'A F@C'F=?E⅋ 1'
F@'F='I@@?' A?B @E'A1' F@' E@1 ? @' C J@'A1' @= ?>' AB@C@ >? ⅋
=?E'= b @E'A1' F@' @ 'A1' F@' F=C>@⅋ F@' F= ⅋F '1 C@'E@1@? @'
@ F@C'A?' F@'D @=' A1'6> " *4! ' 6 >! ' AC' 6> " *4! ' 4 ! '=' A'
F@'GFA @' F=C>@' ?' F ' ?E J@? ' ' A?' F ' F=C>@' A' F@'
Z C z' =?E' F@'B@ HE '1A ?E' F@]!@A?⅋ ' ' JDA I @' A' ='GF@ F@C'
F@' ' A?B @E'AC'= b @E'A1'=? 'D=C =C'DAC A?'A1' F ' A ?'
AC' ?A ' @' ' @C = ? '?A ' A?B @E' A1' F@' GFA @' F@' 1= '
F= ' ?' @D I@KK @J@?' =?' ' A1' 5=C =J@? G= '1A ?E'?@ @ =C ⅋
@@J ' A' ' CA?> ' A' FAG'GF='I ' 1AC' F= ' 'G= ' F@' ?T
B@C = ' =G'A ' F ' IZ@ ⅋= ACE ?>' A' F@' @] ' IAA< ' =?E'D B A '
E@ A? H 783

/=1("4 2'' 2&
7 (44/ '' =/P
1<(4 /=

F@' :ä ,' 8' 3 @ ' ' ⅋ '8⅋?A @E'BA ' ⅋D ' - ⅋ = @ 'FAG'=?'
? C J@?' J = 'I@'E@ C I@E' ?' =?' ?E J@?'1AC' @= ?>'
' ' = E' A' F=B@' I@@?' 1ACJ@]! ' F@' DC= @' DA?' = ' ?E T
J@? '1AC' @= ?>'?A @ 'AC'A F@C'GC @?' @ @ ⅋ A' @ ' A ' F@

W-Ü *:/'M' ' *:/(=2'' ')94' =4/+* ')' BDM' +' :' 49/' : (/14 2'' 42' 49/'
;+' ' ' +' :' (/==7/**' 6<(#' +' :' 49/'J/(: 14' 7+=')< *4#' 2&=4/+* ')'
1'3' ' 9 =' (/=4=' 2'' +' ; =+""(/9/'= 2'' 2&' 2'*#' DM' =2J/(/)'=' 3<4' +*#' 49/' 249/(
9/' 19+()/' 42' 49/'6 (#' '/J/(' +""/+(=' 2'' ; 2' /#' ; /'4 2' /:' ''49/' ': 14 ; /'4' ':
49/' (/12(:' +' :' 49/' J/(: 14' +=' 4+0)'' '' +=' 49/' ' : 14 ; /'4' 7+=' &2(' =4/+* ')' '' +
49 =' 1+=/' 79=' +')'/(+*#' J/(: 14' 2&') *4#' : 7/** ') 92<=/' 49/' + ; 2<''4'<''' 42' BA' 7+='
79 19' 2'' 49/' (/12(:' 72<*:' 3/' /''4/(/:' ; +4/(+*? 79 19' (+ =/=' I49*#' 49/' 236/1P
+=' +' J/(: 14' 2&' =4/+* ')' + ' 49/' ; 2' /#=' 4 2'' 49+4' 49/'6<(#' 7/(' : (/14/:' 42' 12'P
19+()/:' ''49/' ' : 14 ; /'4? 2'' +' "*/+' 2& J 14' &' 49/#' 7/(' =+4 =& /:' 49+4' 49/' "(P
&d ! ' 9 & ' 49/' (/12(:'=2' (&(2 ;' /J/(# =2' /(' =42*/' 0=2 ; /' 2&' 49/' 12 '=$ 79 19'
72<*:' "(24/14' 49/' "(=2' /(&(2 ;' /J/(# ;)94' 3/' */=' 49+' ' a- ' '' /) ' KK 9+("
*+(1/'# 2& 79 19' 9/' 7+=' =2' 12' J 14/:' G ! 2V' ' M' .E.' 79/(' 49/' ': 14 ; /'4
+' :' 2& 12<(=/' &(2 ;' +'*+(1/'# 2& DM' =2J/P 19+()/:' 49/'=4/+* ')' 2&' ' /4# 47 2' "/'' /='
(/)'= +' :' 47/'4# &2<(' 9+*&"/'1/' +' :' 49/' "(2=/P
183' /) ' ,' 2' :' .' /'' ' Y.D' 1<42(' 7+=' '2' 1/(4+ '' 79/49/(' 49/' 12 ''
+(*/' ' : ==/'4/'4/' 9 =' :/1=2'' 7+=' ''"/'' /='2(' 9+*&"/'1/'? 2*&/' '
7+=' ( )94' .=4' '' 49/') (2<' :' 49+4' &'49/(' 7+=' 1/(4+ '4# 49+4' +'# 9/*:' 49+4' &'49/(' 7+=' 1/(4+ '4# 49+4' +'#
6<(#' 12<*:' '2' 12' J 14' '%W' 7 : 2' /' 2&' 49/(' :/=1("4 2'' 2& 12 '' 9+:' 3// ''
<''*/=' 49/((' +=' "(22& 2&' =2 ; /' ="/1 & 1' 4+0/'' 4' 72<*:' 3/' =<&& 1 / '4 3<4' 9 ='
12 '' =42*/'' ? G' :*#' '' 49/') (2<' :' 49+4' &<4<(/' =2' *2(:=9 "' (/12 ; :/':/' 49+4' ! ' &<4<(/' =2'
/J :/'1/' 2& =4/+* ')' 2' /' +(4 1*/' :2/=' 2'4' ; +'# 0" /1/=' 2&12"'"/(' 12 ''$2(' 012'"'/(' 4
7+((+'4' +' J/(: 14' 2&')< *4#' 2& =4/+* ')' ; 2' /#' $ 2& 49/' J+*</' 2&' 1' =92<*:' 3/' 0
=/J/(+*' +(4 1*/=' H(:*#' '' 49/') (2<' :' =4+4/:
49+4' 49/' /J :/'1/' +4' ; 2=4' 2'*#' "(2J/:

5 + x + z % . . .

?A @ AC A F@C @ C @ = 1 @?> F; N=d I G= @ @E I@1AC@ F@ =IAB@ F= F@ J >F I@ E@ C I@E ?= >@?@C, J=??@C%=?E ?@@E ?A I@ @ A "<6 !& 1:3 ?= = @ I@1AC@ F@ =IAB@ GF@C@=C>@E G F= @= ?>7=@CT = ?A @ AJJA? = @E =I=?< ?A @%H A1 F@ B= @% , %=?E A?B @E%=?AIZ@ A?GF F G= =<@?A F E@ C D A?A1 F@ ?A @ G= C@1@CC@E A F@Z E>@ %GFA = F@ E F@ ?E J@? = E; = % ?E@ C I ?>5 F@DCAD@C A @?A I@=7 4 4&&4 6 #6<6 4 (E E ?A 1A AG=? A1 F@ E@ C D A? A1 DCAD@C ?F@ = @%=?E F= F@ =EE A?7 AJJA? = @E= I=?< ?A @H E E ?A = E F AC > ?= GCA?>E@ C D A?%N d] 1 F@ ?E J@? E@ C I@E F@ ? C J@? ?F@ GACE A1 F@ = @ C@= ?>5 F@ A11@? @% G= 11 @? %7#3 ?= = @ I@1AC@ Z @=IAB@ GF@C@ F@ ?E J@? F=C>@E F@ @= ?>5 A1 7A?@ I=?< ?A @ 1AC F@ D= J@? A1 _ =?E?1 F@ B= @ A1 %H=?E F@ ?A @ G= = ?A @; * = @% %F@ E F@ B=C T =? @ 1= = % N@d ?= ?E J@? 1AC @= ?>5 =DCAJ AC ?A @ G= F@ E >AAE GF F E@ C I@E = 7A?@ DCAJ AC ?A @ 1AC F@ D= J@? A1 1B@ > ?@= H N Md

Y F@ ?@ @ =C E@ C D A?A1=I=?< ?A @ ?E@CG@? A? E@C=I @ E A?I@1AC@ F@ =IAB@ ?= F@ = @ A1=?= ?E J@? DA?= F@ J I@KK ?>5 % ! @A % 98% N?AG C@D@= @Ed F@ ?T E J@? F=C>@E F@ DC A?@C G F @J I@KK ?>5 7E B@C % A G % ? ?@ I=?< ?A @ 1AC F@ D= J@? A1E B@C J A1 JA?@ % =JA ? T ?>5 ?F@ GFA @ A=@C=?= J A1 JA?@ % A G % F@ J A1 _ A1=G1 J A?@ A1 C@= C = ?%=?E A1 F@ B= @ A1 A1 <@ =G1 J A?@ ;H=?E% DA?@CCAC A C@B@C @ F@ Z E>J@? % G= AIT Z@ @E F= ?A?@ A1 F@ = @ F=E E@ @CJ ?@E F= F=?= ?E T J@? A?= ? ?>5 ?A E@ C D A?A1=? D=C =C ?A @ GF= @B@C G= 11 @? ; I F@ A C F@ E F= F G= =11 @? E@ C D A? ACE @?IACA >F% % = E% F= F@ A? E@C@E F= =1 @C F@ = @ F=E J=E@ I=?< ?A @ F@ IZ@ A1 =C @? % F@ J >F I@E@ C I@E ?F@ =J@ J=??@C= A F@C F ?> GF F F=B@ =?= ? C ? B= @% F= % I =? E@ C D A?=DD =I @ A F@ J = =F= @ ; F= A E@ C I@ F@ J = I=?< ?A @ 1AC F@ D= J@? A1 JA?@ @@J@E A I@ = =C>@C E@ C D A?F=?= F@ = @ C C@b C@E ; =?E F= F@ ?E J@?1 ?b @ A?F=E @ 1AC F ? J I@C% B= @% =?E D@ @ % NI=?< ?A @ I@ ?>5 F@ D@ @ % F@ B= @ _% =?E F@ ? J I@C ? ?@%d =?E F@C@I AJD @E G F F@ C =?E @ F? = C @ A1 =G @ =? % % = E% 7 & F@C@ = D@ 1 F ?>5 J=E@ F@ IZ@ A1 =C @? % A? ?@ @ =C A E@ C I@ = F D@ 1 F ?>% I@ ?>5 = D@ @ A1 F ?>5 F= F@ A?@ ?@ @ =C ?F=C>T ?>5 = =C @? A1 F@@D A E@ C I@ @ F@C = = G@ F@C% @G@% AC = J I ; @ % =??A I@EA I @E% 1 F =?=C> J@? A E DC@T B= % F= GA E I@ A1 =EB=? =>@ A F@ DC A?@C F= FA E

" B H I AI. ==.EHG ! " B G +=4 1 .Y = .AN "DDD W/ /) 2'/= .' 2V .MA *'/=5 1+=/ G +=4 /.Y = HD (23+3*# 49/)(2<' :' 7+= 3/1+<=/ 49/ "4/"B 4+(O!(; */+: IAI 24/W&/b '24/ 7+= +**/) /.'42 3/ &2(49/ "+# ; /'4 2& K W1b (+J/'5 1+=/ G +=4 1 .Y * 7 9 19 = + : /=1("4 J/ +J/(; /'4 2& =HD "YM. YMG .I 49/ 4=/*& W:b /V 4? /7 ; + ! *2<1/=4/("(Wwb */=5 1+=/ G +=4 1 .Y H HD "YMG

0 J/(= 42 7 4 3+ OP 24/= &2(49/ +# ; / 4 2& : J/(= =< ; = 2& ; 2 /#' + ; 2<'4) 49/ 792* / 42 + // (4+ =< ; 2& ; 2 /# 42 7 4 49/ =< ; 2& N 2& *+7&<* ; 2 /# + :' 2& 49/ J+*</ 2& N 2& * O/ *+7P &<* ; 2 /#M$ 9/*: 42 3/ + =<&& 1 / 4h*/ =/("4 2 2& 3+ 0 24/=

I @' E@ C I @E' JAC@ 'D=C =C ';' I@ = @' 1' 'G@C@% =?E' F@' DCA @T AC% ?' F' = @% FA E' 1= ' A' DCAB@' ' A' I@' A1' F= ' D=C =C' E@ C D A?% F@' DC A?@C' GA E' F@C@ DA?' I@' @? @E' A' =?' = b = ' A' = A' ' J = ' I @' = E' A1' I=?< ?A @ ';' ' ?A ' ?@ @ T =C ' A' E@ C I @' =' I=?< ?A @' D=C =C %' = ' =' I=?< ?A @' 1AC' F@' D= J @? ' A1' ' ' AC' - _% I @ = @' 1AC' GF= A@B@C' C=' ' J= ' I@ D= =I @' ' ' ' =' I=?< ?A @ ' ?' <@' J =??@C% ?' =?' ?E J@?' 1AC' @= ?>' =' F=?E<@C F @1% ' ' ?A ' '@ @ =C'! A' E@ C I @' ' =' = F=?E<@C F @1' A1' =? ' D@ 1 ' J =<@' AC' J = @C = %' = ' F= ' ' 'A1' <% ?@?% AC' =? ' A F@C' D=C =C' b = ' F@' =C> J @? ' DA?' F ' D=C ' A1' F@' = @' F= ' =C @?' 1CA J ' F@' DC= @' F= ' F= ' DC@B= @E' A1' E@ C I ?>' F@' D=C =C' J ' 1AC' GF F' F@' ?A @' ' D= =I @% =?E' F= ' F@' JA?@ ' @ C@E' F@C@I ' ' ? = 1 @E ' ' F@' =? G@C' A' F' =?' =C> J @? ' ' F % F= ' GF@ F@C' ' I@' D= =I @' 1AC' A?@' J' AC' 1AC' =?A F@C' ' ' @b = ' =' I=?< ?A @% =?E' =' I=?< ?A @' ' F@' IZ@ ' A1' =C @? ' F@C@1AC@% F ' ' ?A ' =' >AAE' AIZ@ A?% F=' F@' I=?< ?A @' ' ?A ' 11 @? ' @ ' A ' " A' 1 C F@C' E@ C D A?' ' ?@ @ =C ' F=?' ' C@b C@E' 1AC' A F@C' F= @ %' GF F' =C@' F@' IZ@ ' A1' =C @? ';' =?E' ?E@C' F@' >@?@C=' ?= J @' A1' I=?< ?A @% F@' D=C T =C' D@ @ % 1' F@' J' 1AC' GF F' F@' ?A @' ' D= =I @' =?' I@' =E' A' A? @' =' D@ @ % J = ' I @' DCAB@E H "3B

+'0 "2=4 &

' G= ' FA E@?' I@1AC@' F@' :' ,' 8' 3 @ ' ' % F= ' GF@C@' F@' F ?>' A @?' G= ' E@ C I @E' = ' 7=' I=?< DA I %H =?E' G= ' ?A ' @' A % F@' A C ' A E' ?A ' =<@' Z E = ' ?A @' F= ' ' G= ' =' DCAJ T AC ' ?A @% AC' F= ' ' G= ' F' =?' ? C J @? ' = ' J CE@C' F@' -' @A' -% ' -8% J >F ' I @' F@' IZ@ ' A1' =C @? % FA >F' ' G@C@' E@ C I@E' =' J =E@' 1AC' F@' D= J @? ' A1' J A?@ ' I!3

+& 0 '24/=' / ' =92<*:' '24 3/' : /P =1(3/ :' ' 19+44/*=

' =DD@=C ' A' F=B@' I@@?' E@ @C J ?@E% F= ' ?A @ % I % , % G F ?' F@' -' @A' -% ' -8% ?AG' C@D@= @E% FA E' I@' = E' A' I @' F@' DCAD@C ' A1' ' % =?E' A >F ' ?A ' A' I @' E@ C I@E' = ' <6 'G I ' 'G= ' = A' FA E@?% F= ' DA?' =?' ?E J @? ' & F F' = E' F@ J ' A' I @' 7 F@' DCAT D@C ' =?E' F= @ ' A1' ' %H F@' GACE' F= @ ' J >F ' I @' C@Z@ @E' = ' CD =>@% 1!3

/=1("4 2 '' 2& 12 ' ' 19/T</=' * 24/=' +' :' "+"/(=

?' =' = @' I@1AC@' F@' :' ,' 8' 3 @ ' ' % GF@C@' F ?> ' G@C@' E@ C I @E' = ' 7 GA' D @ @ ' A1' F@' CC@? ' A ?' A1' F ' C@= J' = @E' F ?> % A1' F@' B= @' A1' GA' F ?> % A1' F@' >AAE ' =?E' F= @ ' A1' ' F%H ' G= ' F@ E' F= ' F@' ?E J @? ' G= ' ?= C= @% ' JA?@ ' EA@ ' ?A ' 1= ' G F ?' F@' @>= ' @ F? = ' E@1 ? A?' A1' >AAE ' =?E' F= @ ';' I ' F= ' F@' GACE ' 7A1' F@' >AAE ' =?E' F= @ 'H A >F ' A' I @' C@Z@ @E' = ' CD =>@% =?E' F@?' F@' F=C>@' ?' F@' ?E J @?' 11 @? ' = @>@E' F= ' F@' A ?' G= ' FA' DCAD@C ' A1' ' F% 1C3' A' GF@C@' =' F@b @' G= ' E@ C I @E' = ' 7= F@b @' 1AC' F@' J' A1' :_' ' # ' A1' F@' JA?@ ' A1H & ' & % ' G= ' F@ E' F= ' F@' ?E T J @? ' J >F ' I @' C@=E' = ' 1' F@' GACE ' 7A1' F@' JA?@ 'H G@C@' ?A ' F@C@% =?E' F@?' ' G= ' 11 @? % 7 3

& @' F=B@' @@?' F= ' C@ =I @' ?A @ % GF F' =C@' A @?' A?' F@ C' G= ' 1CA J ' F@' I=?<' ?' A?EA?% = ' GF F' F@ ' F=B@' I@@?' D= E% A

' /V ' 29 '=2 ' ' H ' ' ' 8.' 22(S=' :' C D N ' TE YAG ' EAH " B' /V ' 9+(:' ' ' ' IEE' +'0 ' " B' /V ' +: ' G' +=4' ^ ' ' 2' .Y' =' HD' " ' AM. "2t4 3 =' 7/(/' '24' '' <=/' <' 4 # 472' #/+(=' 'Wwb' /)' ' +:*/#' :' /' ' ')(E' +&4/(' 49/' G' ! /2' G' 1' GA' 9+ :' "+==/ :' X TG) " ' ' GHG' ' 9+' 0-2=4 3 ** 1+' '24' " B' L 3' ' !2:&(/#' @' 3/' :/=1(3/ :' +=' +' ' 2&' /V19+')/ IGY

GYD

I C E>@ C@;' < @E' F@ J ' F@C@% =?E' =CC @E' F@ J ' E@=E' ? A' @C ' 1A E F C@ ' F@ ' G@C@' ?E @E' ?' @C 1ACE F C@' 1AC' @= ?>' 1A C' B@' = J @' C< @ ';' =?E' DA?' =' = @' C@ @CB@E% F@' Z E>@ ' F@ E' F= ' F@' GA !E' ! ' ?' F@' E@ C D A?' A E' ?A ' I@' C@Z@ @E' = ' CT D =>@% =?E' F= ' = ' F@' DC A?@C ' F=E' ?A ' F@' C< @ ' ?' =' B@' = @' ?' @C 1ACE F C@% F@' F=C>@% = ' = E% G= '?A ' DCAB@E% =?E' F= ' F@' A?B A?' G= ' GCA?>% 153

A' 'F= ' I@@?' F@ E' DA?' ?E J@1 ' 1AC' F@@D @= ?>' F= ' =' C@ J AB= ' GF ' F@' F@@D' ' = B@' ' @ @? = ' A' A? @' F@' A11@? @% 1 3

' ; +# 1+** ' 3# 49/' =+ ; /' '+ ; /' 79/ '' : /+ :' +=' 79/ '' + J/

' GF@C@' =?' =? J = ' F= ' F@' = J @' =DD@ = A?% GF@ F@C' ' I@' = B@' AC' E@=E% =?E' ' J =<@ ' ?A' E 11@C@? @' = ' A' F@' A11@? @% GF@ F@C' ' G@C@' = B@' AC' E@=E';' =?E' F@' ?E J @?' @ ' F' =DD@ = A?% ' ' ?A' B=C =? @' 1' F@' =? J = ' G= ' E@=E' = ' F@' J @' F@' A11@? @' G= ' A J J @E' F@' DC A?@C' G= ' ?E @E' 1AC' C@ @ B ?>' 6' 6& :' <?AG ?>' F@' = J @' A' F=B@' I@@?' A @?% =?E' F@' = J I' ?=E' I@@?' < @E' I@1AC@' ' G= ' C@ @ B@E;' DA?' =' = @' C@ @CB@E% F@' Z E>@ ' = ' =>C@@E' F= ' F@' A?B A?' G= ' >AAE% = ' G= ' J J = @C = ' = ' A' F@' DC A?@CH' A11@? @' GF@ F@C' F@' = J I' G= ' = B@' AC' E@=E% F ' A11@? @' =?E' F@' D ? F J @?' 1AC' ' I@ ?>' ?' IA F' = @ ' F@' = J @% 1 '3

+(=9 F@' A11@? @' A1' =C @? ' ' C=? AC '=?E' ?A ' A = % ' ' F@C@1AC@' J J = @C = ' GF@ F@C' F@C@' I@' =? ' F' D=C F' ?' F@' A ? ' = ' F= ' = E' ?' F@' ?E J @? ' ?' =?' ?E J @? ' 1AC' =C @? ' 7 = ' F@' D=C F' A1' = @ ' G@?' ?' F@' A ? 'A1' & AC @ @C'H ' =DD@=C@E' F= ' F@' D=C F' A1' = @ ' G@?' ' D=C 4' ?' & AC @ @C F C@'' =?E' D=C ' ?' FCAD F C@;' =?E' ' G= ' F@ E' F= ' F@' ?E J @? ' G= ' 11 @? % 183

9/' 4+0 ')' 2& /+19' +(4 1+/' =' +' =/"+(+4/' &/*2 '#

' FA E' I@' AI @CB@E% F= '= FA >F' A' A J@' D CDA @ ' F@' =< ?>' A1' E B@C ' =C @ ' = ' A?@' =?E' F@' = J @' J @' J = ' I@' A? E@C@E' = ' A?@' @? C@' 1@ A? % 163' @ ' A% A F@C' D CDA @ ' F@' =< ?>' A1' @= F' =C @' F= ' I @@?' F@ E' A' A? @' =' E ? '1@ A? % 1:3

9(/ /' *+(P 1/ ' /=' 7 49 '' = V' ; 2 '49=' ; +# 3/ 19+()/ :' '' 2 ' /' ' : 14 ; / ' 4

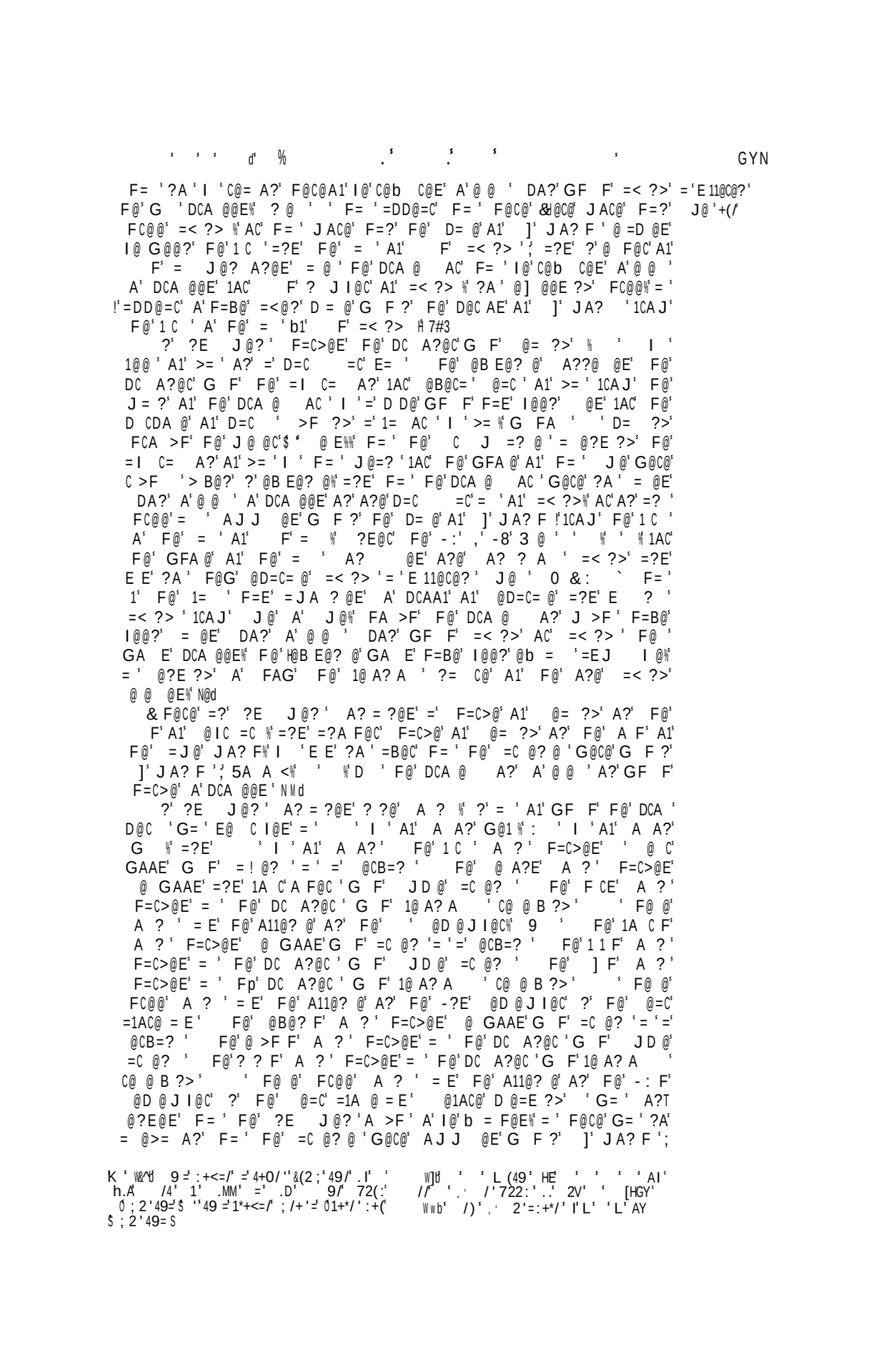
' F@' - :' , ' -8' 3 @ ' ' % ' 8% 7 ' F= ' I@' =G1 ' A' ? @C ' @B@C= ' A ? ' ?' F@' = J @' ?E J @? ' =>= ? ' F@' = J @' D@C A?' 1AC' =? ' ? J I @C' A1' E ? ' = ' A1' @= ?>% ?A ' @] @@E ?>' FC@@% GF F' J = ' F=B@' I @@?' A J J @E' I ' F J ' =>= ? ' F@' = J @' D@C A?' G F ?' F@' ="+1/ A1']' J A? F ' 1CA J' F@' 1 C ' A' F@' = ' A1' F' = % =?E' A' DCA @@E' F@C@A?' 1AC' = ' C =? ' A1' F@ J % N d

9/(/' +' = ')*/' 4+0 ')' =' 19+()/ : ' +' :' =/J/(+' 4+0 ')=

@ ' ' 7 1' DA?' F@' C = ' A1' =? ' ?E J @? ' 1AC' =C @? ' ' F= ' =DD@=C' F= ' F@' DCAD@C ' = @>@E' ?' F' ?E J @? ' A' F=B@' I@@?' A @?' = ' A?@ J @' G= ' =<@?' = ' E 11@C@? ' J @ % F@' DCA @ AC

' / ' + 27+#' .' M ' ' .GE' <*' *220' ' 9/*:' 49+4' +'' ' : 14 ; / '4' &2(=4/+* ')' 0472' 4<(0 /=' $ 7+=' 2' =<"" 2(4/ : 3# 49/' =+ ; /' 1/' 2& =4/+* ')' 472' : /+:' 4<(0 /=' +=' 0472' 4 (0 /=' $; <=4' 3/' 4+0/ '' 42' ; /+'' * J/' 4<(0 /=' ' 3<4' 49 =' 1+=/' =// ; =' 2J/(P (<*/ :' 3# /V ' <10/(')' ' ' ! "N% /V ' : 7+(: =' ' ' ' IND W]% /V' X' + ; =' ' ' ' ' ' ' .MD' /' 49 =' 1+=/' :' 19+"' V ' 8 ' 3' P ' R5% /V ' <10/(')' ' ' ' ' ' ' GIG & W]% / ' ' /(0 '=' I' ' ' ' ' HYH' //' /V' &' 22: 7+(: ' ' ' ' ' ' HGH' 79/(/' 49/(/' 7+=' '2' =<19' "+(=9' +=

49+4' *+ :' '' +'' ' : 14 ; / '4' &2(3<(' ')' +' =4+10' 2&' 3/+'=' +' :' 4' 7+=' 9/*:' ; ; +P 4/(+*' &' 927/JJ/(' 49/' 2&&/ '1/' 7'/(/' *21+*' +=' 3<()*+(#' 92<=/ 3(/+0 ')' 1 ' +=' J+(+' 1/' '' 49/' '+ ; /' 2& 49/' "+(=9' 72<*:' 3/' &+4+*' 2(&' 4'4<(' / :' 2<4' 42' 3/' "+(4' '' +' :' "+(4' 2<4' 2&49/' 12<' 4#' 79/(/' 4' 7+=' : /=1(3/ :' '' 49/' <=<+*' 7+#' +=' 49/' "+(=9' 2&' ' '' 49/' 12 '4#' 2&' /) ' &' (220/=' ' ' ' AIH' /) ' &' +10=2 ' ' ' ' ' ' ' ! ' ' ' IY k" % .' +*/' AH. ' G' +=4' ' ' 1' .Y' E Y _ _ WA% G' +*/' GIA' //' J2*' .' ' ' ID W1% 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' . I' ' .Y' /4' 1' .MM' =' .Y



I ' F@' @ A ' C@1 @E' A' b = F' F@' ?E J@? ;' =?E%' DA?' =' = @' C@ @CB@E' =1 @C' =' B@CE ' A1'> '=>= ? ' AJ@' A1' F@' DC A?@C ' A1' @= ?>%' =?E' =>= ? ' A F@C ' A1' C@ @ B ?>%' 'G=' F@ E' F=' F@' A?B A?' G=' '>AAE%' I ' F=' F@' DCAD@C' A C @' ?' F' =' @= @' ' @ F@C' A' b = F' F@' ?E J@? %' AC' A' D ' F@' DCA @ AC' A' F ' @ @ A?%' 1' F@C@' 'C@= A?' A' =DDC@F@?E' F=' F@' DC A?@C 'G ' I@' @ J I=CC= @E%' N>d

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/&/14=' '' /h / '/'4

(+*' +(' //'#' ; <=4' 3/' 4(/ :' ''49/' 4+(2"/(12<'4#' <4' 49 =' 2&&/'1/' =' 12'P = :/(/ :'+=' /2 ; : 44/ :' '' /J/(#' 12<'4# '42' 79 19' 49/' 49 /& 1+((/=' 49/')22 :=

' A' F@' 3@? @' ?' F@' J =C> ?' A1' F@' ?E > @? ' I@ ?>' 11 @?' @] @D 'GF@?' A ='E@ C D A?' '?@ @ =C %' @@' BA ' %' D' - :

& F=' E@1@ ' EA' ?A ' ?AG' B = @' =?' ?E J@? %' @@' BA ' %' D ' 8

=C @? %' <@' @B@C ' A F@C' A11@? @%' J ' C@> =C ' I@' C @E' ?' F@' =J@%' A ? ' AC' Z C E A?' ?' GF F' 'G=' AJJ @E$ I ' ' FA E' I@' ?A @E' G F' C@ D@ ' A' =C @? %' F=' F@' A11@? @' ' A? E@C@E' =' AJJ @E' ?' @B@C ' A ? ' AC' Z C E A?' ? A' GF F' F@' F @1' =CC @ ' F@' >AAE ;' 1AC' F@' @>= !DA @ A?' A1' F@ J ' ' C@ J = ? ' ?' F@' C @' AG?@C%' =?E' @B@C ' J A J @? H' A?T ? =? @' A1' F@' C@ D= '=?E' 1@ A? '=J A ? ' A' =' ?@G' =D A?' =?E' = DAC = A?' I!3

F@C@1AC@%' 1' =' J =?' @=' >AAE ' ?' F@' A ? ' A1' %' =?E' = ' F@ J ' ? A' F@' A ? ' A1' %' F@' J = ' I@' ?E @E' 1AC' F@' =C @? ' ?' F@' A ? ' A1' ' ' 1' =' AJDA ?E' =C @? ' I@' AJ J @E' ?' A?@' A ? %' =?E' F@' A11@?E@C' =CC ' F@' DCAD@C ' ? A' =?A F@C%' FA >F' F@' J = ' I@' A?B @E' ?' F@' = @C' A ? ' A1' F@' JD @' =C @? %' F@' =??A ' I@' F@C@' A?B @E' A1' F@' AJDA ?E' =C @? ' F ' GF@C@' F@' DC A?@C' CAII@E' F@' J = ' A1' =' @ @C ' @ F@C' ?' & F C@' AC' @C< F C@%' =?E' ICA >F ' ' ? A' * EE @ @]%' =?E' G=' ?E @E' =D T = ' ?' * EE @ @]' A?' F@' ' @A' %' '-8%' ' .%' =?E' .' @A' %' ': %' F@' Z E>@ %' DA?' =' = @' C@ @CB@E%' F@ E' F=' F@' A E' ?A ' I@' A?T B @E' =D = 'A ' A1' F@' A ? ' ?' GF F' F@' @ @C' G=' =<@?' 1CA J' F@' J = %' N d' A' CAII@C ' =?' A? ' I@' C @E' ?' F@' A ? ' GF@C@' AJJ @E' ;' F@' 1@ A? ' C=B@ %' N1 d' F@' =C @? ' J = %' FAG' @B@C%'' ?' AJ@' C@ D@ ' I@' A? E@C@E' = '=' ?@G' =C @? %' =?E' = ' ?I' ?@ @ =C ' ? E ?>' = ' F@4' b = @' A1' F@' AC > ?=' =C @? ;' F@C@1AC@%' 1' F@' F ?>' A @?' ' = @C@E' ?' F=C= @C' ?' F@' 1 C ' A ? ' A' = ' A' I@' ?A' A?>@C' GF=' 'G=' GF@?' A @?%' =?' ?E J@?' ?' F@' @ A?E' A ? ' J 'E@ C I@' '= ACE ?>' A' '= @C@E%' =?E' ?A ' = ACE ?>' A' ' AC > ?=' = @' ?' ?E J@?' G=' DC@1@CC@E' ?' @C 1ACE F C@' 1AC' @= ?>' 1A C' B@' = J @' C< @ ;' =?E' '=DD@=C@E' F=' F@ ' G@C@' A @?' = B@' Z F' = J IC E>@ F C@%' < @E' F@C@%' =?E' =CC @E' E@=E' ? A' @C 1ACE F C@' ' =?E' DA?' F@' DA ? ' I@ ?>' =B@E%' F@' Z E>@ ' F@ E' F=' F@' DC A?@C' J ' I@' = b @E%' = ' F@' ?@B@C' F=E' F@' 7IC= '1 C?= @%H' I ' J @C@ ' @C = ?' D @ @ ' A1' IC= ' ?' @C@1ACE

"3B' /)' ' /#722:' ' ' ')-C ' /V' ' 92 ; =2' ' *' ' .DNAK' " B' H' '=4' . .H' ' +*/' YMD' YME' G ' +#*/#' +*/' .YH' ' +7O' ' ' 1' HH' =' YG M b . ' +*/' AHY I' *+1' 2 : ' HMI' G' +=4' ' ' 1' .Y' "CB' /V' e' :7+(:=' ' +#*/#' ' =' .AY' "' DD. +' :' ' ' IND' ' "' GYE

&'472' "/(=2'-' 62 '4*# =4/+# '' 2'/' 12<'4#' +' :'12'1<(' '' =/1<(')'49/')22:-' '' +'249/(' 12<'4#' 49/# ;+#9/' 'P :14/:' ''49+4' 12<'4#

' 1' GA' D@C !A# ' I@' > !A1 =' 1@ AJA ' =< ?>' ' A?@' A ? '' =?E' A?@' A1' F@ J ' = A?@' =CC ' F@HDCAD@C ' ? A' =?A F@C' A ? '' @ ' 1' F@' A F@C' =1 @CG=CE ' A? C' G F' F J' ?' F@' @ A?E' A ? ' ?' @ C ?>' F@' DA @ A?'' I A F' J = ' I@' ZA ? ' ?E @E' ?' F@' @ A?E' A ? ' A ? ' =?E' #A?AB=?' = E' =' D =?' A' >@ ' AJ@' A= ' 1CA J' F@' DCA @ C]' ?E@C' DC@ @?@' A1' I ?>' F@ J ' F@' DCA @ C]' F=E' F@ J ' ?' CC@ ' = ' =' D I FA @;' F@' DC A?@C ' >A ' F@C' A' @=B@' F@ J ' G F' #A?AB=?' F ' F@' G@?' G F' A ? '' F= ' F@' J >F ' >@ ' F@' JA?@ ' A' D= ' 1AC' F@ J ';' ?' F@C' =I @?@' #A?AB=?' =CC @E' F@ J ' ? A' * EE @ @]'' =?E' A ? ' =1 @CG=CE ' ZA ?@E' F J ' F@C@'' =?E' A? CC@E' ?' @ C ?>' F@ J ' F@' ?E T J @?' G= ' = E' =>= ? ' IA F' ?' !## ?G' =?E' DA?' =' = @' C@ @CB@E'' F@' Z E>@ ' G@C@' ?=? J A ' F= ' = ' A ? ' G= ' DC@ @?' = E ?>' =?E' =I@ ?>' ?' CC@ ' = ' F@' AC > ?= ' =C @? '' F ' A? CC@? @' =1 @CT G=CE ' ?' !## ?' FA >F' =1 @C' =?' ? @CB= '' 1? >F ' I@' A??@ @E' G F' F@' AC > ?= ' =< ?>'' =?E' ICA >F ' EAG?' F ' =C @? ' A' F@' I @b @?' DA @ A?' ?' !## ?' F@ ' F@C@1AC@' F@ E' F@' A?T B A?' C >F '' 7 3

A' 1' GJ' ZA ? ' AJ J ' =' =C @? ' ?' A?@' A ? '' =?E' A?@' A1' F@ J ' =CC ' F@' A @?' >AAE ' ? A' =?A F@C' A ? '' F@' A F@C' ' = AJD=? ?>'' F J'' G FA ' F@ C' @B@C' I@ ?>' @D=C= @E'' F@ ' =C@' IA F' ?E =I @' ?' @ F@C' A ? ';' % F@' DA @ A?' A1' A?@' I@ ?>' F@' DA @ A?' A1' IA F' ?' @= F' A1' F@! A ? @ '' = ' A?>' = ' F@ ' A? ? @' ?' AJD=? ' NLY

** ')'+' =9//'' '' 2'/' 12<'4#' +' :' 4+0 ')' 4=' 1+(1+=/' '42' +'249/(

' A ?' = @>@E' F= ' F@' DC A?@C' E E' @= '' =<@'' =?E' EC B@' =G= ' =' F@@D' ?' @];' F@' F@@D' G= ' = ' @@?' = B@' ?' F@' A ? ' A1' @C 1ACE';' I ' D=C ' A1' F@' =C = @' G= ' 1A ?E' ?' F@' DA @ A?' A1' F@' DC A?@C' ?' @];' F@C@' G@C@' J =C< ' A1' I AAE' ?' F@' 1 @ E' GF@C@' ' F=E' I@@?' = ' @@?' = B@'' A' F= ' ' @@? @E' F= ' ' F=E' I@@?' = >F @C@E' F@C@';' ' G= ' AIZ@ @E' F= ' F@' A ?' F=C>@E' =' EC B ?>' =G!= ' ?' @]'' I ' = ' ' G= ' < @E' ?' @C 1ACE F C@' F= ' G= ' J DA I @;' I ' & E@'' ' '' =1 @C' =< ?>' J @' ' F@' ?@] ' = K@ ' A' A? E@C' F@' b @ A?'' F@ E' F= ' F@' DC A?@C' J >F ' F@' A?B @E' ?' @]'' N d

' 127'=4/*/'' '' 2'/' 12<'4#' +' :' 4=' =0 '' 4+0/'' '42' +'249/('12<'4#

?' =?' ?E J @?' ?' AC<' 1AC' @= ?>' GA' AG < ? '' ' =DD@=C@E' F= ' F@' DC A?@C' F=E' I@@?' = b @E' A1' @= ?>' F@' AG '' = ' F@ ' G@C@' A @?' ?' J @C <';' I ' F@' < ? ' G@C@' 1A ?E' ?' F@' DC A?@CH' DA @ A?' ?' AC<';' @1CA '' '' EA I @E' GF@ F@C' F@' ?E J @?' ' A E' I@' = ?@E'' = ' F@' EA I @E' GF@ F@C' F@' D H D@C ' ?' F@' < ? ' F=E' @B@C' I@@?' ?' F@' DCA @ AC' >6' < ? '' N d

2'*# "/(; 44/:' 49/ ;' 42' "*/+:')< *4#' 2'' 49/' "(2=/1<42('<' :/(4+0 ')'42' (/12 ; ;/' :' 49/ ;' =4(2')*#' 42' ;/(1#' ':' 4' =92<*:' =// ;' 49+4' =<19' +' "*/+' 3 ' 9+J/' =<1P 1// :/:' ,/' ,/V' &' +''' ' ' ' ' ' ! "OB' /V' ' 2<'4#' +=4' '.E.Y' ' +#*/#' " B' /V' ' 2'+)9' +((' <"" RG':/:4]' GH' [W=D' /)' ' /7*+':'G' 2V' ' 'GEH' 9/' ':14 ;/'4' 9+:'' 2' , , +':' *:/' ' ' 9/*:' 49+4' 49 =' ;+:/U 49/' 2&&/'1/' '24' "<' =9+3*/' <':/(' 49/' =4+4<4/? 3<4' 49 =' =' +' ; =4+0/? =//' ** +0]' e' /) ' D' ' GAM' /)' ':(/7=' , ' E.' 2' "2 '4' 7+=' (+=/:' ''49 =' 1+=/'2'' 49/'=9//'' 3/')

7(2')*#' :/=1(3/:' 79 19' W+=' 49/' "<' =9P ;/'4=' &2(=4/+* ')'+' * J/' =9//'' +':'+':/+:' =9//'' /==/'4 +**#' : &&/(D' 4' =// ;=1*/+(*# 42' 9+J/' 3//'' ' //' /V' &' <10/(')' ' ' ' ' GIG' :'' GYE' ' ' ! 1C /&4' L' +((#' G' 2V' ' 'GNI' /&(2#' ' =+ :' 9/' 72<*:' (/=/(J/' 49/' "2 '4? 49/' "(=2'/(' 7+=' 12'J 14/:' 3<4' 4' =' '24' =4+4/:' 79/49/(' +'#49 ')'&<(46/(' 7+=' :2'/' 4' =' T< 4/' 1*/+(' 49+4' 49/(/' 7+=' '2' &2<' :+4 2'' &2(' 49/' :2<34' 2' +*4/(+4 2'' '' 49/' 19+(+14/(' 2&4 9/' 19+44/*' =42*/'' /J/(' ;J/=4=' 49/' "(2"/(4#' '' 4' 2('' +'#' "+(4=' 2&' 4' 2<4' 2&' 49/' 27'/(?+'' =//' /V' &' 27/' G' +=4' ' ' .Y i' IE' "' Y.D' ' 19' VVJ ' /' & 3' ' > ' 79 19' ' +'' + ;

49+4' "+(4 2& 49/' ' 4/ :' ') :2 ;' 79/((' 49/# 9-J' 49/' "(2"/(4#

F= ' C@ @ B@' AC' F=B@' =? ' F= @ %' JA?@ %' B= =I @' @ C %' AC' A F@C' DCAD@C 'GF= A@B@C' GF F' F= ' F=B@' I@@?' A @?' AC' A @C ' G @' 1@ A? A ' =<@?' ?' =? 'A F@C' D=C 'A1' F@' ? @E' 6 ?>EAJ% F' D@C A?' <?AG ?>' F' DCAD@C ' A' F=B@' I@@?' A @?' AC' A F@CT G @' 1@ A? A ' =<@?%' F@' J = ' I@' E@= 'G F%' ?E @E%' C @E%' =?E' D ? F@E' 1AC' F' A11@? @' ?' F= ' D=C 'A1' F@' ? @E' 6 ?>EAJ' GF@C@' F@' F= ' A' C@ @ B@' AC' F=B@' F' DCAD@C %' ?' F@' =J@' J =??@C' = ' 1' ' F=E' I@@?' AC > ?= ' A @?' AC' =<@?' ?' F= ' D=C H N d' !

' F= @ 'G= ' A @?' ?' 'A 'A1' F@' A ? 'A1' * %' =?E' G= ' A?T >?@E' F@? @' = ' =' D=C @ ' I ' F@' F @1' ?' F@' ACE ?=C ' A C @' FCA >F' =' C= G= ' AJD=? %' =?E' G= ' E@ B@C@E' I ' F@J ' A' F@' C@ @ B@C' ?' F@' A ? 'A1' * ' 1AC' F@' D CDA @' A1' I@ ?>' A E' =?E' E DA @E' A1' I ' F J ' F@C@%' =?E' F@C@' G= ' ?A' @B E@? @' A1' =? ' DA @ A?' I ' F@' F @1' ?' F@' A ? 'A1' * % ? @ ' @ F@C' F@' DA @ A?' I ' F@' C= G= ' AJD=? ' AC' A1' F@' C@ @ B@C' A E' I@' E@@J @E' F ' DA @ A?$` @ E%' F= ' F@' F @1' C@ = ?@E' A? CA ' AB@C' F@' =C @' ?' * %' =?E' G= ' F@C@1AC@' ?' DA @ A?' F@C@A1' ? * %' =?E' G= ' =I @' A' I@' C @E' ?' * ' ?E@C' F@' - :' ,' -8' 3 @ ' ' %' ' b

4/+* ') & V4<(/= & @' F=B@' @@?' F= ' F@' @= ?>'A1' F ?> ' =11]@E' A' F@' 1C@@FA E' G= ' ?A ' =' =C @? ' = ' AJJA?' =G%' N=d' =?E' = FA >F' 'G= ' J =E@' 1@ A? 'I ' F@' .' ,' 9' @A' :%' ' - % ' : :%' ' F@' DC A?@C' A E' ?A ' I@' ?E @E' ?' =? ' A ? '@] @D ' F@' A?@' ?' GF F' F@' 1] C@ ' G@C@' 1 C ' =<@?' F@' DC A?@C' G= ' ?E @E' = ' AJJA?' =G' 1AC' @= ?>' @=E' ?' * EE @ @] ;' F@' @=E' F=E@' I@@?' A @?' 1CA J '=' F C F' = ' B@C%' ?' < ?>F=J F C@%' =?E' F@' DC A?@C' G= '1A ?E' ?' DA T @ A?' A1' ' = ' A F= %' ?' * EE @ @]%' ='D = @' G F ?' F@'Z C E T A?' A1' F@' @? C= ' C J ?= ' A C %' GF F' B@C' G= ' ?A ;' =?E' 'G= ' F@ E' F= ' F@' DC A?@C' A E' ?A 'I@' A?B @E' G F ?' F@'Z C E A?' A1' F@' @? C= ' C J ?= ' A C %' 1<3

&&/ '1' ' /+(' 32<' ' :+(/=' 2& 12<' '4 /=' 2(' 2'' +' 62<(' '/# 49(2<)9' =/J/(+' 12<' '4 /=

(22& 2& 49/' *2=='' 2& 49/' 19+44/*

' A' F@' C = ' A1' A11@? @ ' AJJ @E' ?@=C' F@' IA ?E=C @ ' A1' A ? @ ' =?E' E C ?>' =' ZA C?@ 'AC' BA =>@' FCA >F' @B@C=' A ? @ ' @@' BA ' %' D ' 8'

DA?' =?' ?E J@?' 1AC' @= ?>' =' FAC @%' F@' DCA @ AC' DCAB@E' F= 'F@' F=E' D ' F@' FAC @' A' I@' => @E' G F' =' D@C A?' GFA' C@ E@E' G@ B@' J @ 'E =? ' 1CA J ' F ' AG?' C@ E@? @%' =?E%' ?' A?T @b @? @' A1' F@=C ?>' A1' ' A ' 1CA J ' F= ' D@C A?%' F@' G@? ' A' F@' 1 @ E' GF@C@' F@' FAC @' F=E' I@@?' D %' =?E' E AB@C@E' F= ' 'G= ' >A?@' C?@ %' %' ! F ?<' A ' FA E' DCAB@' F@' A ' JAC@' E ? %' I@ = @' 4 ' 4 6 ' I ' F@' DC A?@C ' J >F ' F=B@' AI = ?@E' DA @ A?' A1' F@' FAC @' FA?@ ' 'EA' ?A ' @@' FAG' G@' =?' >@ ' = ' F= 'G FA ' F@' D@C A?' G F' GFAJ' 'G= 'D ' A' => %' AC' F ' @CB=? ' ' ' D@C1@ ' A? @?' G 1' GF= ' F= ' I@@?' DCAB@E' F= ' F@' FAC @' J >F ' F=B@' >A ' A 'A1' F 'D@C A?H' DA @ T A?' ?' AJ@' A F@C' G= %' =?E' ?A ' I '1@ A? HN d' A' GF@C@%' A?' =' J =C' ?E J@? %' ' =DD@=C@E' F= ' =' @CB=? ' G= ' @? ' A' C?' A ' =' FAC @' ?' =' 1 @ E%' =?E' G= ' @? ' A' 1@ F' ' D' =>= ?' F@

"VB' 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' D' ' E' ! /2' I ' 1' GN' =' DY' 9/' 12((/=''2' : ')' 1*+<=/' '' 49/' N ! /2' I ' 1' AA' =' DA' W b' 9+ :' ' <' '*+ 7&<**#' 4+0/ '' $' '=4/+ :' 2& 0&/*2P ' 2<=*#' 4+0/ '' S " VB' ' 2)/(=' HD' ' ' ' ' EH

" B' J .' "' GMN " B' /V' ' **+(' D' ' ' ' YYA' +(0' ' ' . ' *: /(=2' ' ' +' :' +44/=2' ' " B' /V' ; .' (' ' ' DY' +' :' ' M' ' !

?@] ' J AC? ?>%' G F@?' ' G= ' J @E%' I ' F@' @CB=? ' G= ' ?A ' = @E' = ' =' G ?@ %' =?E' F@' DC A?@C' G= ' 1A ?E' ?' DA @ A?' A1' F@' FAC @' F@' ?@] ' E = ;' ' G= ' F@ E%' F= ' F@C@' G= ' ?A ' 11 @?' D aA1' > B@?' A1' F@' A ' ;' =?E' F= ' F@' @CB=? ' A >F ' A' F=B@' I@@?' = @E' A' DCAB@' G F= ' F@' E E' G F' F@' FAC @%' = '1AC' =? F ?>' F= ' =DD@=C@E' A' F@' A? C=C %' F@' @CB=? ' J >F ' F=B@' E@ B@C@E' F@' FAC @' A' F@' DC A?@C%' 1#3

& F' C@>=CE' A' ' @' @B E@ @' ?' = @ ' A1' =C @? %' ' >@?@C= ' A? ' N ? @ ' F@' DC A?@C' ' E@ @ @E' ?' F@' 1= %d' A1' DCAA1' A1f F@' 1@ A? ' F=B ?>' I@@?' A J J @E% =?E' A1' F@' >AAE ' A @?' F=B ?>' I@@?' 1A ?E' FAC %=1 @CG=CE ' ?' F@' DA @ A?' A1' F@' DC A?@C' ;' =?E' DA?' F' DCAA1' F@' >@?@C= ' C @' G ' = = F%' F= ' GF@C@B@C' F@' DCAD@C ' A1' A?@' J =?%' GF F' F= ' I@@?' =<@?' 1CA J ' F J ' G FA ' F ' <?AG @E>@' AC' A? @? %' ' 1A ?E' DA?' =?A F@C%' ' ' ? J I @? ' A?' F= ' A F@C' A' DCAB@' FAG ' F@' =J@' I ' ;' A F@CG @' F@' DC@T J D A?' %' F= ' F@' A I = ?@E' ' 1@ A? A %' N@d' F ' C @%' 1A ?E@E' A?' F@' ?@ @ ' A1' F@' = @%' GF F' =??A ' =E J ' A11@? @ ' A1' F ' < ?E' A' >A' ?D ? F@E%' GF@C@B@C' DA B@' =?E' E C@ ' @B E@? @' ' G=? ?>' A1' F@' > ' A1' F@' D=C %' G ' DCA I = I ' @ EA J ' @=E' A' =' GCA?>' A? A?' 1' E @' = @? A?' I@' D= E' A' F@' D=C =C' C J =? @ %' I ' GF F' F' DC@ J D A?' J = ' I@' G@=<@?@E%' AC' @? C@ ' E@T CA @E ' N Nd' J A?> ' F@' J A ' DCA J ?@? ' A1' F@ @' G ' I@' F@' @?> F' A1' J @' GF F' @ =D @E' I@ G@@?' F@' A ' A1' F@' DCAD@C ' =?E' F@' 1 ?E ?>' A1' ' ?' F@' DA @ A?' A1' F@' DC A?@C' ;' F@' DCA I = I ' A1' F@' DC A?@CH ' F=B ?>' I@@?%' = ' F@' J @' A1' F@' F@1 %' ?@=C' F@' D = @' 1CA J ' GF F' F@' DCAD@C ' G= ' =<@?' ;' =?E' J AC@' @ D@ = ' F@' A?E ' A1' F@' DC A?@C' 1CA J ' 1 C ' A' = %' G F' C@ D@ ' A' F@' DCAT D@C ' 1A ?E' ?' F ' DA @ A?%' =?E' F@' F=C>@' I CA >F ' =>= ? ' F J ' A1' F=B ?>' A I = ?@E' ' I ' @= ?>

' F= ' I@@?' F@ E' F= ' F@' DA @ A?' A1' A @?' DCAD@C '] @@?' J A? F %' 123' AC']' J A? F %' 1<3' AC' FC@@' J A? F ' 1!3' =1 @C' ' G= ' A %' ' ?A ' F' =' C@ @?' DA @ A?' = ' A' D ' F@' DC A?@C' DA?' F@G ?>' FAG' F@' =J @' I ' %' ? @ ' F@C@' I@' @B E@? @' A1' A J @ F ?>' J AC@' F=?' F@' J @C@' 1= ' A1' DA @ A?' = ' ' F' =' E =? @' A1' J @' =1 @C' F@' A ' 4

& F@C@' =' DC A?@C' G= ' ?E @E' 1AC' @= ?>' GA' = < %' GF F' F=E' I@@?' 1A ?E' = I A ' G@? 'E= ' =1 @C' F@ ' G@C@' J @E%' A @C E>@%' %' A E' F@' Z C %' 7 1' ' G= ' ?AG' A' A @' J ' G= F%' =?E' ?' =' 1@G' J ? @

J<*1'2/ <*f' 49+4 79/(f' 49f' =42*/ '' "(2"/(4# =' &2<' :' '' 49f' "2==/== 2 '' 2& +' "/(=2 ' ' 4' =' ' 1< ; 3/ ' 4 2 '' =<19' "/(=2 '' 42' "(2J' 927' 9f' 1+ ; f' 3# 4

/ ')49' 2& 4 ; f' +&4/(' 49f' *2==

Wh&' /V' ' L/**27=' ' ' ' ! ' 4+&&2(:' < ; ' ==' .EHM' 2=+ ' T</4' W1f' G +=4' ' ' 1' .Y' =' NH' " ' YAY' 9 *' 2 '' J : ' .YE' D' : 4

W wb' 9+4' 4' 7 **=2 ; /4 ; /=' * 0/' /J/(# 249/(' (<*/' 2& 9< ; + '' ' '=4 4<4 2 ' ' &+ *' 42')< : /' ( )94*# ; <=4' 3/' + : ; 44/ : ' 2(:' +*/' ; / ' 4 2 '=' +' 1+=/ ' 79 19' 9/' =+#=' 7+=' 4(/ :' 3/&2(/' +' J/(# */+(' / :' + ' :' +(# 6<:)/' 79/(/' +' ; + '' 7+=' 12 ' : / ; ' / :' + ' :' /V/1<4/ :' &2(' 92(=/' =4/+* ') ' <"2 '' "(22& 2& 9 =' 9+J ')' 3/ ' '+"" (/9/' : / :' 7 49' 49/' 92(=/' =92(4*# +&4/(' 4' 7+=' =42*/ '' + ' :' +&4/(7+(:=' 4' 1+ ; f' 2<4' 49+4' 49/' (/+*' 49 /&' 3/ ')' 1*2=/*# "<(=</ : ' 9+ :' 2J/(4+0/ '' 49/' "22(' ; + '' <"2 '' 49/' (2+ : ' + ' :' +=0/ :' 9 :' ,42' 7+*0' 49/' 92(=/' &2(' 9 ; ' 79 */' 9/' 4<(' / :' += : /' <"2 '' +' ' /1/==+(# 211+= 2 ' ' <"2 '' 79 19' 49/' 49 /& ; + : f' 9 =' /=1+"/ ' + ' :' 49/' ; + '' 7+=' +"" (/9/ ' : / :' 7 49' 49/' 92(=/ ' G

+*/ ' GEN' ' :' 4' =' "(23+3*/' 49+4' <"2 '' 49 =' (<*/ ' (/1/ J/(=' 2& =42*/ '')22 : =' +(/' &4/T</ ' 4*# 12 ' J 14/ :' 2& =4/+* ')' 49/ ; ' /V □ −+ G ' ' ' IAN +#*/#' ' 4' =' ' 24' =4+4/ :' 79+4' 49/')22 : =' 7/(/ W b /)' □ ' 22"/(' E' ' ' H.E' +<*/' ' 249 ')' 3<4' "2==/== 2 '' 2& =' 92(=/' /)' 2' +((=' E' 2V' ' ' HHH' ' +=' 42' +' =9//"' 492<)9' 49/' "(=2 ' /(' 9+ :' ; +: /' 12 ' 4(+: 142(# =4+4/P ; / ' 4=' 79/ '' 4' 7+=' &2<' : ' 9+ ' ' /** ' ' /)' □ ' +** ' :' 2V' ' ' GH. ' 2**210' '+' :' 2*/(:)/' ' ' W4b' /V' 2' : + ; = ' H ' ' ' YMM' +(0/' ' 9/')22 : =' &2<' :' '' 49/' "2==/=P = 2 '' 2& 49/' "(=2 ' /(' 7/(/' +'' +V/' +' =+7 ' +' :' +' ; +44210' //' /)' /7*/44 ' :' J2*' :' ' :' E 7' & ' / & `

' G= '1A ?E' A' I@' A?' I@' D@C A?' A1' A?@' A1' A ⅋' GAD E' =11ACE' F@' CA?>@ ' >CA ?E' 1AC' DC@ J ?>' F= ' A ' F=E' A @?' ';' I ' 1' ' J A? F' F@? @' ' G@C@' A' I@' 1A ?E' ?' A C' DA @ A?⅋ F@' DC@ J DT A?' GA E' I@' >C@= ' G@=<@?@E⅋ I@ = @' A @?' DCAD@C ' = ' D= @ ' FCA >F' J =? ' F=?E ℍ "*B

+4 ' (/' 2& 4*X/' +(4 1*/ :

F@' DC A?@C' G= ' F=C>@E' ?' A?@' A ? ' G F' @= ?>' =' C EE @' A?' F@' - F' @D @ J I@C⅋ 9 -⅋=?E' ?' =?A F@C' G F' @= ?>' 1 B@' FAB@ ' A?' F@' F' A1' =? =C ⅋ 9 ⅋ F@' DCAD@C 'N A1' F ' J = @C ' @' F=E' I@@?' ?' F@ C' @ J D A ' A J @' @=C ';' F@' C EE @' =?E' FAB@ ' G@C@' 1A ?E' ?' F ' DA @ A?';' F@' C EE @' ?' F ' I= <' =CE⅋ A?@' FAB@ ' ?' F ' A= FA @⅋ =?A F@C' ?' F ' >=CE@?' AB@C@E' G F' = F@ ⅋ =?E' FC@@' A F@C ' ?' =' E =? ' D > ' A1' F@' DC A?@CH ⅋ =?E' =' G ?@ ' DCAB@E' F= ' ?' F@' I@> ?? ?>' A1' =? =C ' F@' DC A?@C' ICA >F ' A J @' AA ' A' F ' =CE' GF@C@' F@' D > ' G= ⅋ =?E' = @E' ;@ F=E' ICA >F ' F@ J ' A' D ' = ' F@' AD' A1' F@' D > ' A' I@' A ' A1' F@' G= ' F@' IC=?E' J =C<' F=E' I@@?' @C= @E' 1CA J ' A J @' A1' F@' FAB@ ⅋ =?E' F@' DC A?@CH ' ? = ' I @E ' F@' DCA @ ACH ' 1AC@ J =?' = @E' F= ' ' G= ' J DA I @' A' = ' GF@?' F@' =C @ ' G@C@' =<@?';' I '=' G ?@ ' F=E' @@?' =' C EE @' J =C' A' F@' A?@' ?' b @ A?' A?' F@' DCA @ ACH ' DC@ J @ ' ?' F@' J J @C' A1' 9 - ' ' G= ' A?' F@' - ' =? =C ⅋ 9 ⅋ F= ' F@' C EE @' =?E' FAB@ ' G@C@' 1A ?E' ' G= ' A IZ@ @E' F= ' F@' C EE @' ?A ' I@ ?>' DCAB@E' A' F=B@' I@@?' ?' F@' DA @ A?' A1' F@' DCA @ AC ' 1AC' DG=CE ' A1' @ >F @@?' J A? F ⅋ =?E' F@' FAB@ ' 1AC' ?A ' @ ' F=?' @ >F ' J A? F ⅋ F@C@' G= ' ?A' 1 @? ' C@ @?' DA @ A?' I ' F@' DC A?@C' DCAB@E';' F@' A IZ@ A?' G= ' AB@CC @E⅋ =?E⅋ A?' = @= @' C@ @CB@E' ' G= ' F@ E' F= ' ' G= ' C >F ' AB@CC @E⅋ M d

F@' D A?@C' F=E' GA' A? ⅋ A?@' =>@E' @ >F ⅋ F@' A F@C' G@ B@⅋ =?E' F ' @CB=? ' DCAB@E' F= ' ?' F@' G@@<' I@1AC@' FC J = ' F ' J = @C' =?E' F ' A? ' G@? ' ?' =' =C' A' < @D= F⅋ =?E' F@' G@? ' F F@C' G F' F@ J ' A' AD@?' F@' >= @ ' ?A F@C' G ?@ ' DCAB@E' F= ' F@' =G' =' 1 A <' A1' F@@D' EC B@?' FCA >F' < @D= F' @=C ' ?' F@' J AC? ?>⅋ GF@?' ' G= ' I C >F ' J AA? >F ⅋ I ' GA' IA ⅋ =?E' ' G= ' F@C' J DC@ T A?' F= ' F@ ' G@C@' F@' DC A?@CH ' IA ' < @D= F' ' @B@? @@?' AC' @ >F @@?' J @ ' 1CA J ']@ @C';' F@' DCA @ ACH ' 1=C J ' G= ' &@? ' GA' J @ ' 1CA J ']@ @C⅋ =?E' F@' DC A?@CH ' 1=C J ' G= ' =I A ' =' b =C @C' A1' =' J @' 1CA J ' F@' DCA @ ACH ' F@' @CB=? ' A1' J F⅋ =' = @' E@= @C⅋ G@? ' A?' F@' - CE' A1' # @ @J I@C' A' @' AF?H ' CA ' ??' I ' F ' J = @CH ' E C@ A?' F ' Z??' G= ' =' J @' 1CA J ']@ @C';' =?E' @@ ?>' F= ' ?A' F@@D' F=E' D= @E⅋ F@' G@? ' F= 1' =' J @' A?' F@' CA=E⅋ =?E' F@?' J @ ' A?@' A1' F@' DC A?@ H ' IA ' G F' G@? A?@' F@@D⅋ =?E' C@ C?@E' G F' F J ' =?E' F@' F@@D' A' F@' ??⅋ GF@C@' F@' =G' F@' DC A?@C' =?E' F ' A F@C' IA ' F@' F@@D' @@ J @E' G@=C ' G F' C=B@ T ?>⅋ =?E' ' C? ' =IA ' F= 1 D= ' @ >F ' GF@?' F@ ' G@C@' 1 C ' J @ ' F@' DC A?@C' =?E' F@' GA' IA ' G@? ' G F' F@' J =?' A' D ' F@' F@@D' ?' =' 1 @ E ' F@' DC A?@C' =J @' A' F@' ??' = ' @ >F ' AH A <' G F' F ' A ?>@ ' IA ' ?' =' =C ' @' = E' F@' F=E' F@@D' AJ ?>' = A?>' F@' CA=E⅋ =?E' F@' G F@E' A' AD' F@ J ' ?' F@' =CE' ' F@' >A ' <@@D' 1AC' F@ J ' F@' = @' E@= @C' DCAB@E' F= ' F@' F=E' C@ @ B@E' =' @ @C' 1CA J ' F@' DC A?@C' A?' F@' - -?E' #@ @J I@C⅋ = ?>' F= ' F@' FA E' F=B@' AJ @' F@@D' AJ ?>' A?⅋ =?E' F= ' F@' GA E' I@' @=C ' = ' @' AF?H ' CA ' ??⅋ =?E' F= ' 1' F@' = @' E@= @C' A E' ?A ' I@

W b' 210 'S' 1+=/' G' /7' GHY =' ;"2== 3*/' 42' +=1/(4+ '' 49/' 12(((/14' W ℓ /)' ' ')94' ' ' ' HDE 4 W +4/=' '' 49 =' (/"2(4

F@C@ʻ AʻE@=ʻ1ACʻ F@JʻF@ʻG=ʻ AʻB@?EʻAJ@ʻD@CA?ʻAʻFAGʻGF@C@ʻ AʻD ʻF@ʻF@@Dʻ?ʻF ʻ1@Eʻ;=?Eʻ F@ʻ= ACE?> ʻ@?ʻF ʻJ=?ʻ =?Eʻ?ʻF@ʻ@B@?>ʻ=1@Cʻ=ʻA?>ʻI=C>=?>ʻF@ʻIA >FʻF@ʻF@@Dʻ A1ʻF@ʻDCA?@Cʻ F@ʻF@@Dʻ A1ʻF@ʻDCA@ ACʻG@C@ʻDCAB@Eʻ AʻF=B@ʻ I@@?ʻ=JA?>ʻF@@ʻF@@Dʻ F@ʻDCA?@Cʻ F=Eʻ=Eʻ F=ʻF@ʻF=Eʻ IA >FʻʻDAC A?ʻACʻ=ʻA1ʻF@ʻF@@Dʻ I ʻEEʻ?Aʻ=ʻ1CAJʻGFAJʻ ACʻGF@?ʻ ?ʻF ʻ@ @Cʻ F@ʻ=EʻF@ʻF=Eʻ IA >FʻʻJ=ʻA ʻA1ʻF@@Dʻ =?EʻF@ʻGA EʻF=B@ʻF@JʻEC B@?ʻAʻ]@@Cʻ A?ʻF@ʻ- CEʻ F@ʻZ Cʻ 1A ?Eʻ F@ʻDC A?@Cʻ > ʻA1ʻC@ @B?>ʻF@ʻF@@Dʻ<?AG?>ʻF@JʻAʻ F=B@ʻI@@?ʻ A @?ʻ;ʻG=ʻF@?ʻ C>@Eʻ F=ʻF@C@ʻG=ʻ?Aʻ@BE@?@ʻAʻ DDACʻF=ʻA ?ʻ=?Eʻ F=ʻF@ʻZ CʻA >FʻAʻF=B@ʻI@@?ʻAʻ E C@ @Eʻ;I ʻDA?ʻ=ʻ =@ʻC@ @CB@Eʻ DA?ʻF@ʻb @ A?ʻGF@F@C ʻ DA?ʻF@ʻGFA@ʻ=@ʻF@ʻZ C ʻ FA EʻF=B@ʻI@@?ʻE C@ @Eʻ F=ʻ F@ʻA EʻʻA?=G1 ʻ1?Eʻ F@ʻDC A?@Cʻ> ʻDA?ʻF@ʻ@A?Eʻ A ?ʻF@ʻA?B A?ʻG=ʻ=11CJ@Eʻ 5A A <ʻ ʻ ʻ7 1ʻ?Aʻ A F@C ʻ D@C A?ʻ ʻ?BA B@Eʻ?ʻF@ʻC=?=A?ʻ=?Eʻ F@ʻGFA@ʻA1ʻF@ʻ=@ =>=?ʻF@ʻDC A?@Cʻ ʻF=ʻF@ʻG=ʻ1A ?Eʻ?ʻDA @ A?ʻA1ʻF@ʻ A @?ʻDCAD@C ʻF@ʻ@B E@?@ʻGA Eʻ?AʻEA IʻDA?ʻAʻ=ʻ=@ʻ A1ʻ @=?>ʻC=F@Cʻ F=?ʻ=ʻ =@ʻA1ʻC@ @B?>;ʻI ʻ?ʻ@B@C ʻ =@ʻ @]@Dʻ?EE@@EʻGF@C@ʻF@ʻDA @ A?ʻʻAʻC@@?ʻF=ʻʻʻJT DA I@ʻ1ACʻ=?ʻA?@ʻ@@ʻAʻF=B@ʻAJJ @Eʻ F@ʻF@1ʻʻI@AJ@ʻ =ʻJ@C@ʻb @ A?ʻ1ACʻF@ʻZ CʻGF@F@Cʻ F@ʻD@!A?ʻ1A ?Eʻ?ʻ DA @ A?ʻA1ʻF@ʻA@?ʻDCAD@C ʻA@ʻʻF J @1ʻACʻC@ @B@Eʻ ʻ1CAJʻ AJ@ʻA?@ʻ@@ʻ 1ʻF@C@ʻ ʻ?Aʻ A F@Cʻ@B E@?@ʻF@ʻZ CʻG ʻ DCAI=I ʻA? E@C ʻG Fʻ C@=A?ʻF=ʻF@ʻDC A?@Cʻ A@ʻF@ʻDCAT D@C ʻ;I ʻ1ʻF@C@ʻ ʻA F@Cʻ@B E@?@ʻGF Fʻ ʻA? @?ʻ@ F@Cʻ G Fʻ F ʻF=B ?>ʻ A@?ʻF@ʻDCAD@C ʻACʻG Fʻ F ʻF=B ?>ʻC@ @B@Eʻ ʻ 1CAJʻ AJ@ʻA?@ʻ@ @ʻ ʻG ʻI@ʻ1ACʻF@ʻZ CʻAʻ=ʻGF Fʻ=DD@=C ʻAʻ F@JʻF@ʻ JAC@ʻDCAI=I@ʻA A?ʻ @ ʻ ʻ7 F@C@ʻ=C@ʻ FC@@ʻ G= ʻ?ʻGF Fʻ F@ʻDC A?@Cʻ J=ʻF=B@ʻC@ @B@Eʻ F@ @ʻ F@@Dʻ G Fʻ=ʻ > ʻ<?AG @E>@ʻ C ʻF@ʻIA ʻJ=ʻF=B@ʻ A@?ʻF@JʻʻE@D@?T E@? ʻA1ʻF@ Cʻ1=F@C ʻGFAʻJ=ʻF=B@ʻC@ @B@Eʻ F@ʻ F@@D 1CAJʻF@J ʻ @A?E ʻF@ʻ1=F@Cʻ J=ʻF=B@ʻ @?ʻF@ʻIA ʻ=ʻ??A @?ʻ=>@?ʻAʻ C@ @B@ʻF@ʻ F@@Dʻ1CAJʻF@ʻ= =ʻF @1ʻ ?ʻGF Fʻ =@ʻF@ʻ1=F@Cʻ GA Eʻ F=B@ʻI@@?ʻ> ʻA1ʻC@ @B?>ʻ=ʻ=ʻDC ? D=ʻF@ʻIA ʻI@?>ʻ =ʻ ʻG@C@ʻJ@C@ ʻF@ʻ A?>ʻ=CJ ʻG Fʻ GF Fʻ F@ʻ AA<ʻ F@ʻ F@@Dʻ F CE ʻF@ʻJ=ʻF=B@ʻ @?ʻF@ʻIA ʻ1ACʻF@ʻ=J@ʻD CDA @ʻ=ʻ> ʻ =>@? ʻ?ʻGF Fʻ =@ʻ=FA >Fʻ F@ʻIA ʻGA Eʻ I@ʻ F@ʻDC ? D=ʻ?ʻ F@ʻ1@A?ʻNA1ʻC@ @B?>dʻ @ʻ F@ʻ1=F@Cʻ GA Eʻ I@ʻ=?ʻ= @ ACʻ I@1AC@ʻF@ʻ1= ʻ=?Eʻ J >FʻI@ʻ A?B @Eʻ=ʻ=ʻDC ? D= ʻ = <T I C?ʻ ʻ!&F@?ʻ ʻF=ʻI@@?ʻ FAG?ʻ F=ʻDCAD@C ʻF=ʻI@@?ʻ A@?ʻ =?Eʻ F=ʻI@@?ʻ1A ?Eʻ C@ @? ʻ=1@Cʻ ʻA ʻ?ʻF@ʻDA @ A?ʻA1ʻF@ʻ DC A?@Cʻ F@ʻ = @Eʻ DA?ʻAʻ= A ?ʻ1ACʻF=B ?>ʻ ʻ=?Eʻ A?ʻF ʻ 1= ?>ʻAʻEAʻ Aʻ F@ʻZ C ʻJ= ʻB@C ʻG@ ʻ ?1@Cʻ F=ʻF ʻDA @ A?ʻ G=ʻE FA?@ ʻ=?Eʻ F=ʻF@ʻG=ʻ @ F@Cʻ F@ʻ F @1ʻACʻF@ʻC@ @B@C ʻ = ACE?>ʻAʻ F@ʻ C J =? @ ʻ 1ʻF@ʻF=Eʻ I@@?ʻ @@?ʻ?@=Cʻ F@ʻ D = @ʻGF@C@ʻ F@ʻ DCAD@C ʻG=ʻ<@DʻI@1AC@ʻ ʻG=ʻ A @?ʻ F@ʻJ= ʻ 1= C ʻ ?1@Cʻ F=ʻF@ʻG=ʻF@ʻ F @1ʻ 1ʻA F@Cʻ C J =? @ ʻ FAGʻ F=ʻ ʻ JAC@ʻDCAI=I@ʻ F=ʻF@ʻG=ʻ?Aʻ F@ʻ F @1ʻ F@ʻDC@ JD A?ʻ Gb Eʻ I@ʻ F=ʻF@ʻG=ʻF@ʻC@ @B@C ʻ F@ʻZ CʻFA Eʻ?Aʻ A?B ʻ F@ʻDC A?@Cʻ A1ʻC@ @B?>ʻ ? @ ʻ F@ ʻ=C@ʻ = 1@Eʻ F=ʻF@ʻ ʻ?Aʻ F ʻ = =ʻ F @1ʻ7 3 4

ʻ "B /)ʻ ʻ +') ; /+:ʻ ʻ ʻ ʻIGDʻ ʻ 49/ʻ=9//"ʻ7/(/ʻ"(2J/:ʻ42ʻ9+J/ʻ3//ʻ ʻ"49/ʻ 1*/+(/(ʻ1+=/ʻ49+"ʻ 49 =ʻ 49/(/ʻ ʻ/J/(ʻ7+=ʻm "2==/== 2"ʻ 2&49/ʻ =2"ʻ 2"ʻ 49/ʻ (2+:ʻ+':

DA?'=?' ?E J@? '1AC' @= ?>' GA'@?E 'A1'GAA @?' A F%GF F' G@C@'=IA ' G@? ' =CE '@= F' ?' @?> F;' '=DD@=C@E' F= ' F@' A F' G= ' J @E' A?' F@' - CE' A1' =? =C %' GF@?' 'G= ' ?' =?' ?1 ? F@E' = @%'=?E' F= ' D=C ' A1' ' G= ' @1 ' A?' F@' - ' A1' * =C F' I ' F@' DC A?@C' = ' F@' FA @' A1' A?@' 5AC @C%' =?E' F= 'A?' F@'! F' A1' F@' =J@' J A? F%' F@' DC A?@C' @?' F@' C@ E @' A' I@' FAC?' ' G=' I J @E' F= ' F@' @?> F' A1' J @' ? @' F@' A 'G= ' A'>C@= %' F='?A' DC@ J D A?' A1' > ' G= ' C= @ER'=>= ? %' F@' DC A?@C' I ' F@' DA @ A?' A1' ' 5= '@ ?%' %' 7 ' F ?<' F@' @?> F' A1' J @' ' A' I@' A? E@C@E' G F'C@1@C@? @' A' F@' ?= C@' A1' F@'=C @ 'GF F'=C@' A @?' 1' F@ '=C@' F' = ' D= ' 1CA J' F=?E' A' F=?E' C@=E %' GA' J A? F 'GA E' I@'=' A?>' J @%' I 'F@C@' F= ' '?A ' A'$ ' '='b @ T A?'1AC' F@'Z C H NGd

9/(N'=/J/(+' ' <? 1@%' =?E @ <%' G= F%' @ @> = %' =?E' J 11 ?@@C' G@C@' I C>T
+(4 1'/-' +((' =C A ' A @?7A?' F@' - . F' A1' * =C F%' 9: %' =?E' = ' 1A ?E' ?'
=42*/ '' +' ;' +*' F@' DC A?@CH' FA @' A?' F@' 9 F' * =C F%' 9: : %' GF@?' F@' = @E'
&2<' :' +'49/' F= ' F@' F=E' F=E' AJ@' A1' F@ J ' ?' F ' DA @ A?' JAC@' F=?' =' "(=2' /(S-' @=C' ?E= %' ' %' A E' F@'Z C ' F= %' 7 1' F@C@' F=E' I@@?' ?A F ?>'
"2==/== 2' 1A ?E' I ' F@'<? 1@%'= ' F= ' J >F ' F=?>@' F=?E ' 1C@b @? %' 'GA E'
I@' AA' CA?>' A' ?1@C' F= ' F@' DC A?@C' J ' F=B@' I@@?' F@'
F @1;' =' J = ' F ?>' F= 'GA E' F=?>@' F=?E ' B@C ' @= 'GA E' I@'
AA' @'=1 @C' A' A?>'=' J @;' I ' F@?' =>= ?' ' =??A ' I@' A?T
@= @E' F= ' 1%' ? @=E' A1' A?@%' F@C@' =C@' @B@C=' =C @ ' F= '=C@'?A '
<@ ' A' F=B@' F=?>@E' 1CA J' F=?E' A' F=?E%' =?E' F@?' A 'F=B@' AJ@'
A>@ F@C' ? A' F@' AE 'A1' F@' =J@'d@C ?%' F= ' =<@ ' A11'1CAJ'
F@'@11@ ' F= 'GA E' I@' DCAE @E' I ' F@' =D @' A1' J @ H N d

2==/== 2'' 2&' & F@C@' A?'=?' ?E J@? '1AC' @= ?>' GA bdA @ @C %' A? = ? ?>'
+' -EEC' '24/' =' I=?< ?A @' 1AC' 8 _' =?E' =' C = ' 5= = @' E B E@?E' G=CC=? %' '
=/J/ '' ; 2 '49=' =DD@=C@E' F= ' F@' DC A?@C' G= ' =' @ @C AC @C'=?E' @ @C =CC @C' ?'
+&4/(' 4=' *2== F@' A?EA?'5A ' 11 @%'=?E' F= 'F@' F=E' I@@?' @ J D A @E' = ' =' AC @C'
A?' F@' . F' =? =C %' 9 %' ?' AC ?>' @ @C '1AC' F@' = ' @? C= '
# C %'=?E' =' I=?< ?A @' 1AC' 8 / ' F=E' I@@?' @? %' G F' F@' G=CT
C=? ' D@ 1 @E' ?' F@' ?E J @? %' 1CA J' EE@C 1 @ E' A' =' 1 C J'
?' F@' = ' @? C= ' # B A?%' ?' =' @ @C' GF F' A >F ' A' F=B@'
=CC B@E' A?' F@' . F' ?' A?EA?%' I ' F@' @ @C' G= '?@B@C' E@ B@C@E'
?' ?@%' 9 -%' GF 'F@' G= ' ' =' AC @C' A1' @ @C %' F@' DC A?@C'
G= '=DDC@F@?E@E' A?'=?A F@C' F=C>@' A1'=I C= ?>'A F@C'?A @ '1CAJ'
@ @C %'=?E'= <@E' 1'F@' F=E'=? 'A F@C'?A @ '= 'FA J @%'=?E'F@'C@D @E'
F@' F=E' A?@' 1AC' 8 / %' ' ?' F= B@ %' ?' =' = F IA]' = ' F ' C@ E@? @$
=?E' ?' F= ' IA]' F@' ?A @' G= '1A ?E%' =?E' A?' ' I@ ?>'DCAE @E%' F@'
DC A?@C' BA ? @@C@E' =' = @ J @? ' F= ' F@' F=E' D <@E' ' D' A?'
? I C '5=B@ J @? %' ?' ='DA <@ IAA<%' @?' J A? F ' I@1AC@%' =?E' ?'
F 'E@1@? @' F@'C@D@= @E' F= ' = @ J @? %' =?E' =EE@E' F= 'F@' F=E'<@D '
'= ' F ' J @' ?'@]D@ = A?' A1' @@ ?>' =' C@G=CE' A11@C@E' 1AC' ' @'
=E J @E' F '> '= ' A' F@' A F@C'?A @ %' I 'E@ =C@E' F ' ??A @? @'
= ' A' F ' ?A @ ' C= J G@ %' %' A E' F@'Z C ' F= ' 7 F@'DA @ A?' A1'
A @?'DCAD@C ' FAC '=1 @C' 'F= ' I@@?' A @?' ' CA?>'@B E@? @%' ?

49/' "(=2' /(' (/1/ J/ : ' 49/ ;' +4' 49/' ' ' ' =4/+* ')' &2(' 49/' */44/('+""2 '4 ')' 49/'
+' :' 49/((' 7+=' +3<' : +'4' /J : / '1/' & ; //4 ')' 49 49/ 1+44*/' : /+*/(' "(2J/=' 49/'
)< *4#' 0 '27*/ :)/ ' +' :' 4' 7+=' "/(&/14*#' "(/J 2<=' '4/ '4 2 ' ' +' :' =<"" 2(&=' 2'/' 2(
; ; +4/(+#' 79/49/(' 49/' "(=2' /(' 9+ :' 249/('2&49/=' J /7='
"(/J 2<=*# =42*/ '' 49/ ;' ? &2(' +' ; +' ' ; +# W ; b /V ' +(4(;)/ ' ' ' ' ' YA.
3/' +' 49 /&+' :' +' (/1/ J/('+=' 7/**' 9/(/' " B /) ' ' 2J/# 2(1/=4/(' < ; '
7+=' +*=2' /J : / '1/' 49+4' 9/' / 49/(' =42*/ ' 2(J ' C1)). ' ' ' ' !
J+=' +'' +11/==2(# 3/&2(' 49/' &+14' 42' 49/

DA?' @F' 1 @ ' * C' =C< @' AI @CB@ ' ' = A' A' I@' =C@1 ' AI @CB@E' F= ' F@' J @C@' 1 ?E ?>' A1' A @?' >AAE ' ?' F@' FA @' A1' F@' DC A?@C' & F@C@' F@C@' =C@' A F@C' ? J = @ ' A1' F@' FA @' =D=I @' A1' @= ?>' F@' DCAD@C ' ? 11 @? ' @B E@? @' A' DCAB@' =' E4 !4 ' I ' F@' DC A?@C' "OB

2==/== 2 '' * _# +' 7 &/

& F@C@' >AAE ' G@C@' 1A ?E' ?' F@' FA @' A1' =' I ?E' J =?' =?E' F@' DC A?@C' F 'G 1@' = E' F@' F=E' D C F= @E' F@ J '=' A?>' J @' I@1AC@' ; C @' ' F@ E' F= ' = ' F@' = E' F@' IA >F ' F@' >AAE ' ' J ' I@ @1 ' A' F@' Z C ' A' E@ E@' G F@ F@C' F@' >AAE ' G@C@' ?' F@C' DA @ A?' G FA ' F@' A? @? ' =?E' A? CA ' A1' F@C' F I=?E' =?E' 1' F@ 'G@C@' F@' Z C ' A >F ' A' 1 ?E' F@C' > ' " B

'=<&& 1 / '4 /J : / '12' 2& "2==/== 2 '

& F@C@' GA' ICA F@C ' =>@E' 1A C @@?' =?E' @ @B@?' G@C@' 1A ?E' F@! ? >F ' =1 @C' =' I C> =C ' A? @= @E' ?' =' AC? I ?' ?' =?' AD@?' > > ' FA @' =?E' AJ @' A1' F@' DCAD@C ' F E' ?' AJ @' C%U=II F' ?@=C' F@' I ?' =?E' AJ @' J AC@' F E' ?' =' ZA1 ' AB@C' F@' > > FA @' =?E' F@' IA ' = E' F@ ' G@? ' F@C@' A' @@D' A ' A1' F@' A E' =?E' F@ ' E E' ?A ' J =<@' =? ' = J' A' F@' DCAD@C ;' 5A A <' ' %!F@ E' F= ' FA >F' F@C@' J >F ' I@' >CA ?E ' A1' D A?' F@C@' G= ' ?A' DA @ A?' A1' F@' DCAD@C ' I ' F@' DC A?@C ' DCAB@E' N d

J : / '1/' 2& =4/+* ') 3+(*/#

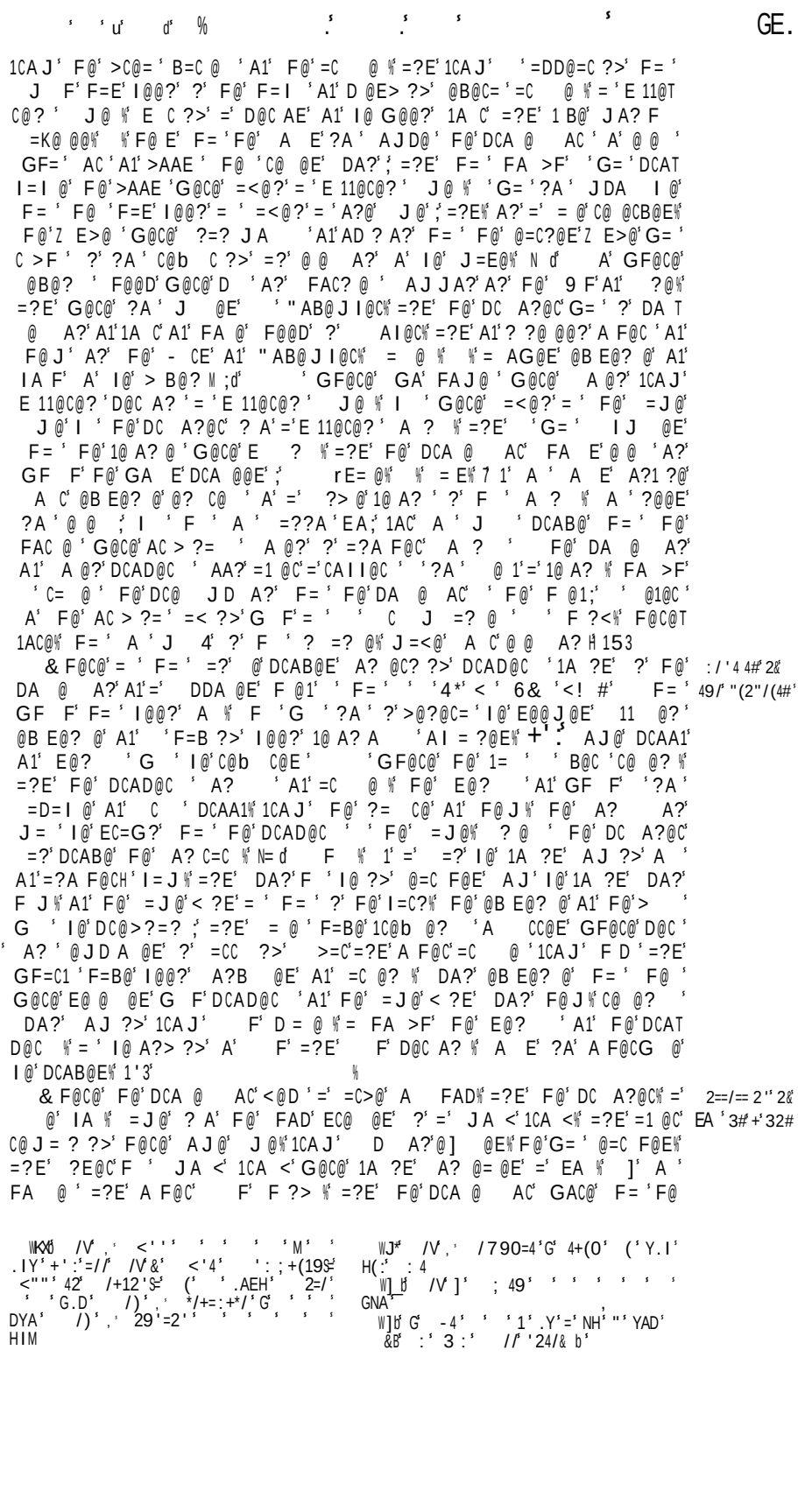
?' =?' ?E J @? ' 1AC' @= ?>' 1A C' = < ' A1' I=C @ ' ' =DD@=C@E' F= ' F@' DC A?@C =?E' =' > C ' G@C@' @ J D A @E' I ' F@' DCA @ AC' ?' F ' I=C?' A' G ??AG' AJ @' I=C @ ' G F' GF F' Fu' F=E' J]@E' AJ@' =?=C @@E ' ?@' A1' F@' DC A @C ' 1@ F@E' @B@C= ' = < ' 1CA J ' F@' FA @' ? A' F@' I=C?' =?E' F@' =?E' F@' > C ' 1 @E' F@ J ' G F' I=C @ ' F@' DC A?@C ' F@?' @? ' F@' > C ' FA J @' FA >F' I@1AC@' F@' = ' J @ ' ' G@ B@' AH A <' F@' = J @' ? >F [' F@' DCA @ AC' =G' F@' DC A?@C ' >A' ? A' F@' =I @' =?E' FC@@' J ? @ ' =1 @CG=CE ' F@' @? @C@E' F@' =I @' =?E' ?A' A?@' G= ' F@C@' ;' I ' F@' 1A ?E' F@' DC T A?@C ' A? @= @E' ?E@C' AJ @' C=G' ?' =' A1 ' AB@C' F@' =I @' " @ F@C' I=C @ ' ?AC' = <' G= ' 1A ?E' ?' F@' A1 ;' I ' ?' =' I ?' GF F' G= ' ?' =?' =D@C C@' A1' F@' G= ' I@ G@@?' F@' =I @' =?E' F@' I=C?' F@' DCA @ AC' 1A ?E' FC@@' = < ' 1 ' A1' I=C @ ' =?E' F@' I=C @ ' I=E' =?=C @@E' J]@E' G F' ' =?E' F@' DCA @ AC' GAC@' F= ' F@' I@ @B@E' F@' I=C @ ' G= ' F ' DCAD@C ' ' G= ' ?A' D=C ' A1' F@' DC T A?@C H E ' A' D = @' F@' I=C @ ' ?' = < ' AC' A' D ' F@' = < ' ?' F@' I ?' ;' =?E' DA?' =' = @' C@ @CB@E' ' G= ' F@ E' F= ' F@C@' G= ' AB@CT GF@ J ?>' @B E@? @' >= ? ' IA F' DC A?@C ' N d

9/(/' =/J/(+' +(4 1'/=' +(/' *2=4X' + ' :' 49/# ; +#' 9+J/' 3// '' 4+0/ '' +4' 49/' =+ ; /' 4 ; / ' /J : / '1/' 2& 49/' *2==' 2& +'' ; +#' 3/') J/ '

?' =?' ?E J @? ' 1AC' @= ?>' =' b =? ' A1' CA I@ ' <' =?E' A F@C' =C @ ' =DD@=C@E' F= ' F@' DC A?@C' G= ' F@' @CB=? ' A1' F@' DCA @ AC' =?E' ?A F ?>' G= ' J @E' 'Z ' I@1AC@' F ' =DDC@F@?T A?' ?AC' F=E' F@' I@@?' @@?' A' =<@' =? F ?>' A ' A1' F@' FA @' I ' =1 @C' F@' G= ' =DDC@F@?E@E' F@' =E J @E' F=B ?>' =<@?' =' >C@=' B=C @ ' A1' F ?> ' AJ @' A1' GF F' F@' F=E' @? ' A' A?@' J F' ;' F@' DCA @ AC' GAC@' F= ' F@' F=E' ?A' EA I ' F= ' F@' = H @ ' G@C@' =<@?' = ' E 11@C@? ' J @ V' =?E' ' =DD@=C@E' DCA I=I @' F= ' F= ' G= ' F@' = @

W'H G' 4+(0' J :' ')' '24/' "3B' H(:' : 4' 4' ; <=4' 3/' 23=/(J/ : ' 927/J/(' 49+4' */+('/ :' 6< :) /=' 9+J/') / '/(+**#12 'P = : /(/ :' =<19' /J : / '1/' +=' =<&& 1 / ' 4 42' 1+**' <"2 '' 49/' 211<" /(' 2&' 49/' 92<=/' 42' +112<' 4' &2(' 49/' "2==/== 2 '' ? 2 '' 49/')(2< ' :' 49+4' 49/' 92<=/' 3/ ')' '' 9 =' 211<" +4 2 ' ' 49/' "(2"/(4# 7+=' &2<' ' :' ''9 =' "2==/== 2 ' ' + ' :' 49/(/' =//' ')22 :' (/+=2 '' 42(' 49 =' 12<(=/' 3/1+<=/' +=' ; +=4/(' 2&' 49/' 92<=/' 9/' ; <=4' 3/' "(/=< ; / :' 42' 9+J/' 49/' 12 ' 4(2*' 2J/(' 4

+ ' :' 42' "/(; 4' ' 249 ')' 42' 12 ; /' ' 42' 4' 7 492<4' 9 =' =+ ' 14 2 '' ? +4' 49/' =+ ; /' 4 ; /' 4' =' &2(' 49/' 6<(#' <' : /(' +**' 49/' 1 (1< ; P =4+ ' 1/=' 42' =+#' 79/49/(' 49/' ; +=4/(' =42*/' 49/' "(2"/(4# 2(' + ' #' 2&' 49/' 249/(' ' ; +4/=' 2&' 49/' 92<=/' ' ' !(' /) ' + ' 0=' :' 2V' ' ' GHE W=H /) ' 224=' G' 2V' ' ' . E W 6 /) ' 3' + ; 7+#=' /+(=' ' HD.



I@ @B@E' I@'];' A 'FA @ ' A' I@'F 'DCAD@C %' I@ = @' F@ '@]= '
C@ @J I @E' A F@C' A 'FA @ 'A1' F@' =J@' AC'GF F' F@'F=E' ?'F '
FAD%' =?E'F@'>=B@' F@' =J@'@B E@? @'G F'C@>=CE' A' = ' F@' A F@C'
=C @ ' @] @D ' F@'EA %' =?E' F@' GAC@' F= ' F@' EA 'F=E' I@@?'F %'
= 'F@'1A ?E' DA?' 'F ' DC B= @' J =C<' ;' I ' F@' A E' ?A ' = ' F= '
F@'F=E'?A ' A E' %' =?E'F@'F=E'?A ' J @E%' =?E' A E'?A ' J %'1CAJ'
F@' ?= C@'A1' F@' A <%' =? 'A1' F@'=C @ 'GF F' F@'DC A?@C'G= '
F=C>@E' G F' @= ?> ' C @%' %' = E%' ' @@J ' A' J@' F= ' A '
F=B@'1= @E' A' @ =I F' ?' F ' = @' F@' 4"E> '# ! !' ' ' C @'
F@'DCA @ AC' G@=C ' F= ' F@'EA 'G= ' A? @' F %' I ' F@' =??A '
= @' F= ' 'G= ' =<@?'1CAJ'F J';=?E%'1AC'= >F ' F= '=DD@=C ' A' F@'
A? C=C %' Fu'DC A?@C' J= 'F=B@' AJ@' I ' ' ?'=?' FA?@ 'J=??@C H
?E'=?'= b = 'G= 'E C@ @E%' "VB

2==/== 2'' 2&
"/""/(' '' 49/'
2':2'' 210=

DA?'=?' ?E J@?'1AC' @= ?>'='b =? 'A1'D@DD@C' '=DD@=C@E'
F= ' F@' DC A?@C' G= ' @@?' AJ ?>' A 'A1' F@' AG@C' CAAJ' A1' ='
G=C@FA @' ?' F@' A?EA?' #A < %' ?' F@'1 AAC' =IAB@' GF uF' =' =C>@'
b =? 'A1' D@DD@C' G= ' E@DA @E%' AJ@' ?' I=> ' =?E' AJ@' AA @'
A?' F@'1 AAC' F@' D@C A?' F=B ?>' F@' F=C>@' A1' F@' G=C@FA @'
ADD@E' F J%' =?E' E%' 7 ' F ?<' F@C@' ' AJ@ F ?>' GCA?>' =IA '
A H F@'DC A?@C' = E%' 7 ' FAD@' A 'G ' ?A ' I@' F=CE' G F' J@%H
=?E' FC@G' ='b =? 'A1'D@DD@C' A ' A1' F 'DA <@'A?' F@'>CA ?E '
F@' G ?@ ' = @E' F= '?A'D@DD@C' G= ' J @E%' =?E'F@' A E' ?A '
= '1CAJ' F@' =C>@'b =? 'A1'D@DD@C' F= 'G= ' ?' F@' G=C@FA @'
F= ' =? 'F=E' I@@?' A @?;' I ' F@' D@DD@C' 1A ?E' A?' F@' DC A?@C'
G= 'A1' F@' <@' E@ C D A?'G F' F@'D@DD@C''?' F@'G=C@FA @' F@'
DC A?@C'F=E'?A' I ?@ ' ?' F@' G=C@FA @' 'G= ' A? @?E@E' F= '
F@' 4"E> '# ! !' J 'I@'DCAB@E';=?E' F= ' F@C@' '?A'=@B E@? @'
A'>A' A' F@'Z C ';' I ' F@' AIZ@ A?'G= ' AB@CC @E%'=?E%' DA?'='
= @' C@ @CB@E%' 'G= ' F@ E' F= ' F@' A?B A?' G= ' C >F ' F@'
A11@? @' J 'I@'DCAB@E';' I ' F@C@' '?A'= FAC ' F= ' F@' 4"E> '
! !' J 'I@' @]DC@ 'DCAB@E' ?' @B@C ' = @' F@' E ? A?'
I@ G@@?' F ' = @' =?E' D 2' B' M" #2 ' N=d' ' D = ?' F@C@' F@'
@' IA '= @C @E' F= ' F@'EA 'G= ' F ' AG?%' =?E' A?E @E'F JT
@ 1' <@' =?' FA?@ ' D@C A?';' F@C@' F@!' DC A?@C' E E' ?A ' = ' F@'
D@DD@C'G= 'F 'AG?'DCAD@C %' I '7#A?H' I@'F=CE' DA?' J@ H N d

9/' T</=4 2''
2& *2==' ='&2('
49/' 6<(#

A' GF@C@' F@' DC A?@C' &!=' ?E @E' 1AC' @= ?>' A= %' =?E' '
=DD@=C@E' F= ' 'G= ' F ' E ' ' A?B@ '=' A?' A1' A=' 1CAJ' F '
J= @CH' DC@J @ ' A' FA @' A1'=' AJ@C%' =?E'F@' @1 'G F' F@' A= '
?'=' =C'= ' -' AH A <'=?E'E@ B@C@E' F@J' = ' ' AH A <';' =?E'= ' -g

W=B' /)' ' (/:)/' .' 2V' ' ' GHA'
9/' (/"2(4 2& 49 =' 1+=/' ^' +'#49 ')'3<4'
=+4 =&+142(#'+' :' '' /)'&' <(42'' '
+<*/' ' =4+4/:' 49+4' 49/' 32#+==/(4/:'
49+4' 49/' :2*#' 7+=' 9 =' 27''+':'12':<14/:'
9 ;=/*& * 0/'+'' 92'/=4"/(=2'' 2& 79 19'
49/(Y' =' '2' ;/'4 2'' '' 49 =' (/"2(4' 79 19'
49/(/&2(/' 1+'' '24' 3/' 12'= :)(/:' +=' +11<P
(+4/' +':'1/(4+ '*#' :2/=' '24' 7+((+'4' 49/'
;+() '+*''24/49+4' 0 '+19+()/' 2&*+(1/'#'
&' 49/' "(2=/1<42(' 1+'' '24' =7/+(' 42' 49/' *2==
2& 49/'+(4 1*/'=+ :'42' 3/' =42*/'' 49/' "(P
=2'/(' ;<=4' 3/' +1T< 44/:S' '' /)' &'
<(42'' Y' 2V' ' ' GNH' +<*/' ' '
=+ :' 0 69/' 2&4S'1/' 7 49' 79 19' 49/' "(P
=2'/(' =' 19+()/:' ;<=4' 3/' "(2J/:'+' :'49+4'
'J2*J/=' 49/'' /1/== 4#' 2&' "(2J '')'49+4' 49/'
"(2=/1<42(S')22:=' 9+J/' 3// '' 4+0/'' 3<4

79#' =' 49+4' 42' 3/' :&&/(/'4*#' "(2J/:'&(2;'
49/' (/=4' 2&' 49/' 1+=/' ^ &' 49/'1 (1<;=4+'1/=
=+4 =&#' 49/' 6<(#' 79+4' (<*/' =' 49/(/' 79 19'
(/':/(=' =2;/' ;2(/' "2=4 J/' +':' :(/14'
"(22&'/1/==+(#^$ '' 49/=/' 1+=/=' 4' ='
"*+ '' 49/' "(2"/(12<(=/' =' 4 '*/+J/' 49/'
/J:/'1/' 42' 49/'6<(#' ' '!
" B' 0
' /)' □' <(42'' /+(=' ' GEG'
+<*/' ' 0 &'+';+'')2' '42' 49/' 2':2''
210=' =23/(' 7 492<4' ;/+'=' 2&)/44 ')'
:(<'0' +':' 12;/=' 2<4' 2& 2'/' 2& 49/'
1/**+(=' J/(#':(<'0' 79/(/'' +(/' +' ;**2''
)+**2'=' 2& 7 '/' ' 49 '0' 49+4' 72<*:' 3/'
(/+=2'+3*/' /J:/'1/' 49+4' 9/' 9+:'=42*/''
=2;/' 2& 49/' 7 '/' ''4*(+4' 1/**+(' 492<)9'
#2<' 12<*:' '24' "(2J/' 49+4' +'# 7 '/' 7+='
=42*/'' 2(' +'#7 '/' 7+=' ;==/:'S

AH A <' F@' A E' ' I ;' I ' F@C@' G= ' ?A' @B E@? @' A1' F@' b =? '
E@ B@C@E' = ' F@' A J @CH' I@ ?>' @ ' F=?' =' A?%' AC' A1'=? ' A F@C'
A=' F=B ?>' I@@?' J @E' & @ %' %' @1 ' F@' b @ A?' A' F@' Z C '
GF@ F@C' F@' ' I ' G@ >F ' A E' I ' F@' DC A?@C' G@C@' ?A ' D=C ' A1'
F@' A? ' N d
B E@? @' F= ' F@' DCAD@C ' A @?' ' A1' AJ@' 6 > ' G ' = A' I@' +*<f' 2& 49f'
J = @C = %' = ' 1' ' I@' A1' ?A' B= @%' ' ' ?A ' =' IZ@ ' ?' C@ D@ ' A1' "(266/(4##
GF F' =C @? ' =?'LI@' A?=? @E ' 1#3' ' DCAD@C ' J = ' I@' A1'
B= @' A' F@' AG?@C' FA >F' ?A ' A1'>@?@C=' B= @' F %' GF@C@' F@'
?E J @? ' G= ' 1AC' @= ?>' D @ @ ' A1' D=D@C' G F' =B= =I @' = J D '
F@C@A?%' =?E' ' =DD@=C@E' F= ' F@' D @ @ ' A1' D=D@C' G@C@' C@ =I @'
?A @ ' A1' =' A ? C ' I=?<' GF F' F=E' I@@?' D= E%' =?E' G@C@' ! '
"6 ! >' 1AC' F@' D CDA @' A1' I@ ?>' C@ @E%' ' G= ' E@ E@E' F= ' F@ '
G@C@' F@' B= =I ' DCAD@C ' A1' F@' A ? ' I=?<@C %' N FA >F'
' ?A ' DCA J AC ?A @ ' G F ?' ' @A' -%' ' -8d' =?E' IZ@ ' A1'
=C @? %' N@d
A' =' J @ J AC=?E J' A1' =' J' A1' J A?@ ' GF F' =' D@C A?' AG@E' F@' (2"/(4#' '// :'
DCA @ AC' F= ' I@@?' F@ E' A' I@' F@' IZ@ ' A1' CA I I@C ' NMd' ' '2f 3f 2& 49f'
= FA >F' F@' F= @ ' J ' I@' A1' AJ@' B= @%' ' ?@@E' ?A ' F@' A1' F@' J+*<f' 2& =2 ; f'
B= @' A1' AJ@' <?AG?' A ?%' = ' A1' =' 1=C F ?>' = ' @= %' 123 0'2< ; ' 12 ' '
& F' C@ D@ ' A' FA @' =C @? @ %' GF F' =C@' =>>C=B= @E' I ' F@' 9f' J+*<f'
= J A ? ' A1' F@' DCAD@C ' A @?%' = ' ?' F@' = @' A1' @= ?>' ?' =' ; <=4f 9f' 2&
EG@ ?> FA @' A' F@' B= @' A1' 6 ' ' J ' =DD@=C' F= ' F@')22 :' =42*/ '' '
DCAD@C %' F@' B= @' A1' GF F' ' =<@?' ? A' A J D = A?%' G= ' = ' +4' 49f' =+ ; f'
A @?' = ' F@' = J @!7 J @ ' AC%' ?' 1= %' GF@C@' F ?> ' =C@' A @?' = ' 4 ; /
E 1@C@? ' J @ %' F@C@[' =C@' E 11@C@?' = ' A1' @= ?>' I!3' ' '
@@ J ' F= ' 1' F@' DCAD@C ' A1' @B@C=' D@C A? ' ?>' A>@ F@C' ?' A?@'
I ?E @' AC' F@ ' DA?' F@' =J @' =I @%' AC' @B@?' ?' F@' =J @' FA @%' I@'
A @?' A>@ F@C' = ' A?@' J @%' F@'B= @' A1' F@' GFA @' J = ' I@' D ' A>@T
F@C%' 1AC' F' @= ?>' ' A?@' @? C@' 1@ A? %' 1!3' ?E' G@' F=B@' @@?'
F= ' GF@C@' =' @CB=? ' @= ' @B@C=' =C @ ' = ' E 11@C@? ' J @ %' F '
=CC @ ' F@ J ' A ' A1' F ' J = @CH' FA @' = ' F@' = J b' J @%' F@' J = ' F@'
A?B @E' A1' @= ?>! ?' =' EG@ ?> FA @' A' F@' B= @' A1' 8V%' 1' = '
F@' =C @ ' = J A ? ' A' F= ' B= @%' ' FA >F' F@' D@B@C' AA<' A' F= '
= J A ? ' = ' =? ' A?@' J @%' aC3
?' =' = @' GF@C@' F@' DC A?@C' G= ' ?E @E' DA?' F@' -' ??@%'
' % N?AG' C@D@= @Ed' 1AC' @= ?>' ?' =' EG@ ?> FA @' A' F@' = J A ? '
A1' 1AC ' F ?> %' =?E' F@' >AAE ' 1A ?E' G@C@' ?A ' DCAB@E' A' = J A ? '
A' 1AC ' F ?> ;' F@' A C ' @1 ' ' A' F@!Z C ' A' A? E@C%' DA?'
F@' 1= ' A1' F@' = @%' GF@ F@C' F@' DC A?@C' F=E' ?A ' A @?' F@' C@ '
A1' F@' F ?> ' GF F' F@' DCA @ AC' A %' = ' G@ ' = ' FA @' GF F' F=E'
@@?' DCAE @E%' 7<3
' F@' .' ,' ' @A' :%' ' -9%' ' 8%' 7GF@C@' =? ' D@C A?' F= ' I@' ?T <(#' '2& 42'
E @E' A1' C@= A?' AC' 1@ A? %' F@' Z C ' J D=?@ @E' A' C ' F' D@C A? 'T< (f' 2& 49f'
(=2 ' /(' =' *+<:=' 1

W1b' /U' .' 22"/(' .' L' ' L' EA' G' +=4' ' ' ' .Y' =' .HY' "' DIM'
/)' 9' 210&2(:' ..' 2V' ' ' .Y /4(/' 1+=/' .' /+19' GNI' L+(*/#'
R b' 9 "2/S' 1+=/' ' "' GH.' 2 ;' 1+=/' ' =99<(=4' ' <(//# / '4' =='
)' ' :' ! ' G' K 4+(0' (;' */+:' .DEY' G' +=4' ' ' 3 :
IAM R b' .' +*/ AH.' G' +=4' ' ' 1' .Y'
W1b' *+(0/S' 1+=/' G' /+19' .MHY' =' .HY' "' DIM' DI.
J ' "' GGA "*b' /V' ' 2' /=' I' ' ' 'G.D' .'
W w b' /V' ')'*/#' A' ' ' ' YMG' "' YD
!<(' /#' R:b' + ; *42' S' 1+=/' .' /+19' HIE'
"3b' 3' 2((=' N' ' ' ' HIN' .' "' YA' 9f' 6<(# &2' 'W 49f' "('
+(0/' =2' /(')< *4#' 2& =4/+* ')' 42' 49f' J+*<f'
8 b' .' *+7 0' ' ' M' HH' =' AM' Y. 2& &2(4# =9 ** ')=

F= '?A 'FS' F=C>@E' A' ?b C@' A? @C? ?>'F ' =?E %' @?@J@? %'AC'
>AAE %' ?AC' GF@ F@C' F@'1 @E' 1AC' F' C@= A?' AC' 1@ A? H

<' =9 ; /'4 ' F@' -:^ ,' -8' 3 @ ' ' %' ' :%' 7GFA A@B@C' F= ' I@' A?B @E'
&2(' / 4+"*/' A1' JD @' =C @? %' AC' A1' =? '1@ A? 'F@C@I ' J=E@' D ? F=I @' <@'
*+(1/'# JD @' =C @? %' F= 'N@] @D ' ?' F@' = @ 'F@C@ ?=1 @C' A F@CG @' DCAT
B E@E' 1ACd' I@' =I @%' = ' F@' E C@ A?' A1' F@' A C %' A' I@' <@D ' ! '
E 6 ' " ! ># '*4"' < ' "&'4*' <" ' ' 6" 'N1d AC' A' I@' JDC A?@E'
1AC' =? ' @CJ ' ?A ' @] @@E ?>' GA' @=C %' G F' AC' G FA ' F=CE' =IA C%'
=?E' G F' AC' G FA ' A =C ' A?1 ?@J@? %' =?E' 1' =' J = @' ?E@C' F@'
=>@' A1'] @@?' @=C %' G F' AC' G FA ' GF DD ?>%HNJd

' A' F@' D ? FJ@? '1AC' =C @? ' =1 @C' =' DC@B A ' A?B A?' 1AC'
1@ A? %' , %' @@' ' .%' %' %' =?E' ' A1' F ' %' BA ' %' D ' 8' ; =?E'
@@' ?' >@?@C= ' = ' A' D ? FJ@? '1AC' =' I @b @? '1@ A? %' =?E' = ' A!'
F@'1AC J ' A1' F@' ?E J@? ' =?E' DCAA1' A1' F@' DC@B A ' A?B A?%'
, %' BA ' %' DD ' .%'

' A' @? @? ?>' =' D@C A?' ?' DC A?' ?E@C' @? @? @' 1AC' =?A F@C'
C J@%' @@' .' ,' ' @A ' :%' ' -9%' ' ;' ?A @E%' BA ' %' D ' 9

/=4 4444 2' ' A' F@' AG?@C' A1' DCAD@C ' A @?%' , %' I@ ?>' @? @E' A' C@ T
A?' A1' 'A?' F@' A?B A?' A1' F@' A11@?E@C%' @@' - :' ,' -8' 3 @ ' '
%' ' %' BA ' %' D ' 9

WM' 24' */==' 49+'' & J/' #/+(=' &' 49/' +='42' 9+(:'*+32<(K'=//' ' . .N' J2*' .' "' 'EM'
2&&/'1/' 7+='224' ' 44/ :' +&4/(' 49/' GY49' :+# +='42' =2* 4+(#'22 '& ' / ; /+4'+' :' 79 "" ')?
2&' <*#' .EYI' ? =//' J2*' .' "' DH +' :' =/1' . .D' J2*' .' "' E.' +='42' & '/'
R B' 9 =' 1*+<=/' =' 4+0/'' &(2 ;' 49/' +' :' =<(/4 /=? +='42' 49/' "<' =9 ; /'4' 2&'
D' 'E ! /2' I' M' GN' ==' H' I?' N ! /2' I' "('1 "+*=' '' 49 f' =/12' :' -)(//' +' :' +1P
M' AA' ==' H' I' W b? +' :' .G' ' .H /4' 1/==2(/=' =/1' NE' J2*' .' "" '.DI' .EA
1' . .' =' .' //' =/1' . .E' J2 ' .' "' EM

GEA

‘ ‘

L‘ !‘ ‘ ‘

K ‘ C@ D@ ‘ A‘ F‘ @= ?>‘ 1CA J‘ F@‘ D@C A?‘ = ‘ EA@ ‘ ?A ‘ 4/+* ‘)‘&(2 ;‘
=J A ? ‘ A‘CA I I@C %%I ‘ F@‘ - :‘ ,‘ -8‘ 3 @ ‘ ‘ %‘ ‘ : %‘ 7GFA A@B@C‘ "/(=2‘ ‘
F= ‘CA I‘ =? ‘D@C A?%‘AC‘ F= ‘ @= ‘=? ‘ F= @ %‘ J A?@ %‘AC‘B= =I @‘
@ C ‘1CA J‘ F@‘D@C A?‘A1‘=?A F@C%‘ F= ‘ I@‘ > ‘A1‘1@ A? %‘=?E‘
I@ ?>‘ A?B @E‘ F@C@A1‘ F= ‘ I@‘ =I @%‘ = ‘ F@‘ E C@ A?‘A1‘ F@‘
A C %‘ A‘ I@‘<@D ‘ ?‘ D@?= ‘ @CB E@‘ 1AC‘ =? ‘ @C J‘ ?A ‘ @] @@E ?>‘
1A C @@?‘ @=C ‘ =?E‘ ?A ‘ @ ‘ F=?‘ FC@@‘N=d‘ @=C % ` AC‘ A‘ I@‘ J DC T
A?@E‘1AC‘=? ‘ @C J‘ ?A ‘ @] @@E ?>‘ GA‘ @=C %‘G F‘AC‘G FA ‘F=CE‘
=I A C%‘=?E‘G F‘AC‘G FA ‘ A =C ‘ A?1 ?@J @? H1<3
DA?‘ F@‘ :9‘ @A‘ %‘ ‘ ‘ -%‘ ‘G= ‘FA E@?‘ F= ‘ F@‘ ?E ‘ Z F@‘ ‘ : /&‘
J @? ‘?@@E‘?A ‘?@>= B@‘ F@‘1AC @‘AC‘1@=C‘?@ @ =C ‘ A‘ A? @‘ ; /‘4‘//:‘
CA I I@C %‘=?E‘ F= %‘ FA >F‘ ‘ FA E‘=DD@=C‘ DA?‘ F@‘ @B E@? @‘ F= ‘ [‘
F@C@‘G= ‘ F‘ yI @‘AC‘1@=C%‘ F@‘D ? F J @? ‘ J DA @E‘ I ‘ F= ‘ +‘ :‘49/‘@]4"X
= @‘ J >F ‘ I@‘ ?1 @E%‘N d‘ =4/‘1/‘A1
A‘ A? @‘ =‘ @= ?>‘1CA J‘ F@‘D@C A?%‘ F@‘ F ?>‘ =<@?‘ J ‘
I@‘ AJ D @ @ ‘ C@J AB@E‘ 1CA J‘ F@‘ D@C A?‘ & F@C@‘ ‘ =DD@=C@E‘ A F@4 FJq‘
F= ‘ F@‘DCA @ ACH‘DA <@ I AA<‘G= ‘ ?‘ F@‘ ? E@‘1CA? DA <@‘A1‘ %Z‘‘
F ‘ A= %‘=?E‘ F@‘DCA @ AC‘1@ ‘ =‘ F=?E‘ I@ G@@?‘ F ‘ A= ‘ =?E‘ L A @?‘J? ‘I‘
G= A= ‘ = @J D ?>‘ A‘ >@‘ F@‘ I AA<‘ A %‘ =?E‘ F@‘ DCA @ AC‘ C@JAB@E‘1CA J‘
FC ‘ F ‘ C >F ‘ F=?E‘ EAG?‘ A‘F ‘ I AA<%‘=?E‘ ?‘EA ?>‘ A‘IC F@E‘ 4 4
F@‘ DC A?@CH‘ F=?E‘;‘ F@‘ I AA<‘ G= ‘Z ‘ 1 @E‘ A ‘A1‘ F@‘ DA <@ %‘
=?‘ ? F‘ =I AB@‘ F@‘ AD‘A1‘ F@‘DA 6@%‘ I ‘C@ C?@E‘ J J @E = @ ‘
? A‘ F@‘DA <@‘;‘ ‘ G= ‘ F@ E‘ I ‘ J =ZAC ‘A1‘ F@‘Z E>@ %‘ F= ‘ F@‘
DC A?@C‘ G= ‘ ?A ‘ >F ‘ A?B @E‘A1‘ @= ?>‘1CA J‘ F@‘ D@C A?%‘
I@ = @‘1CA J‘1 C ‘ A‘ = ‘ F@‘ I AA<‘ C@J = ?@E‘ =I A ‘ F@‘ D@C A?‘A1‘
F@‘DCA @ AC‘;‘ I ‘ F@‘Z E>@ ‘= ‘ =>C@@E‘ F= ‘ Fu‘ J D @‘ =C @? ‘
G= ‘ A J D @ @%‘1#3
FA >F‘ A‘ A? @‘ F@‘ A11@? @‘ F@C@‘ J ‘ I@‘ =‘ C@ J AB= ‘A1‘ <‘4 49/‘
F@‘ DCAD@C ‘ 1CA J‘ F@‘ D@C A?%‘ @ ‘ =‘ F= CH‘ I C@=E F‘ GE ‘ EA ‘ 1 3
DA?‘ =?‘ ?E J @? ‘1AC‘ @= ?>‘ =‘ G= F‘ 1CA J‘ F@‘D@C A?‘ ‘ 11 @%
=DD@=C@E‘ F= ‘ F@‘ G= F‘ G= ‘ =CC @E‘ I ‘ F@‘ DCA @ AC‘ ?‘ F ‘
G= A= ‘ DA <@ %‘=?E‘ F@‘ F= ?%‘ GF F‘ G= ‘= = F@E‘ A‘ F@‘ G= F‘
= ‘ A?@‘ @?E%‘ G= ‘ = ‘ F@‘ A F@C‘ @?E‘ D= @E‘ FCA >F‘ =‘ I A? FA @‘A1

,UUS&[X6 24‘ */=‘ 49+ ‘‘ & J/‘ #/+(=‘ &‘ 49/‘ :/)(//‘+‘ :‘+11/==2(/=‘=//‘=/1‘ NE‘J2*‘ . ‘
2&&/‘ ‘1/‘ 7+=‘ 12 ; ; 44/ :‘ +&4/(‘ 49/‘ GA49‘ "‘ .EA
<*#‘ .EY I‘ //J2*‘ .‘ "‘ DH W 6‘ /V‘ ‘ /+(1/‘ ‘ +#*/#‘ ‘
W 6‘ 9 =‘ 1*+<=/‘ =‘ 4+0/ ‘‘ &(2 ;‘ 49/‘ D +‘ :‘ ‘ ‘ ‘ .DI‘ ‘ &‘ 29 ‘=2‘ ‘ ‘ ‘
‘ I‘ ‘ .‘ /4‘ 1‘ ED‘ =‘ A‘ =‘ 42‘ ‘HG.
9+ ; ‘ *+32<(‘ 1 ‘=//‘ ==‘ . .D‘ . .E‘ . .N‘ " 6‘ /V‘ ‘ 92 ; "=2‘ ‘ ‘ ‘ ‘ ‘ ‘
J2*‘ . ‘ "‘ "‘ EM‘ E.‘ ? +=‘ 42‘ 2&&/ ‘1/=‘ 2‘‘49/‘ DE
=/+/‘=//‘=/1‘ . .A‘ J2*‘ . ‘ "‘ . I‘ 9/‘ 14‘ Wh6‘ /(‘ *: /(=2‘ ‘ ‘ ‘ /) ‘ ; "P
: 2e‘ ‘24‘ /V4/ ‘ :‘ 42‘ 124*+‘ : ‘ =‘ 42‘49/‘ =2‘ ‘ 7
"< * =9 ; / ‘4‘ 2&‘ "(‘1 "+*=‘ ‘‘ 49/‘ =/12‘ :

GEY ' 8 ' 3' B ' ' ' $ % &' J

F ' G= A= ' GF@C@' ' G= ' <@D ' I ' F@' G= F <@ ' C?@E' A' = ' A' DC@B@? ' F@' F= ?' DD ?>' FCA >F ' F@' DC A?@C' AA<' F@' G= F' A ' A1' F@' DCA @ ACH ' DA <@ ' =?E' 1AC I ' EC@G' F@' F= ?' A ' A1' F@' I A? FA @' ; I ' F ' F=?E' G= ' @ K@E' d ' F@' DCA @ ACH ' G 1@' =?E' ' F@?' =DD@=C@E' F= ' = FA >F' F@' F= ?' =?E' G= F <@ ' F=E' I@@?' EC=G?' A ' A1' F@' I A? FA @' F@' DA ? ' A1' F@' <@ ' F=E' = >F ' DA?' =?A F@C' I A?' =?E' G= ' F@C@I ' D@?E@E ' ' G= ' A? @?E@E' F= ' F@' DC A?@C' G= ' > ' A1' =?'= @ J D ' A? ; I ' F@' A C ' FA >F ' F= ' = ' F@' F= ?' F=E' I@@?' C@ J AB@E' 1CA J ' F@' I A? FA @' F@' 1@ A? ' G= ' A J D @ @' ?A G F =?E ?>' =' IT @b @?' E@ @? A?' I ' ' A? = ' G F' F@' I A?; =?E' DA?' = = @' C@ @CB@E' ' G= ' F@ E' F= ' F@' A?B A?' G= ' C >F ' F ' = @' G= ' ?' ?A' C@ D@ ' <@' D- ?' B ' ! <!& 4 G' N M d' 1AC' ?' F= ' = @' F@C@' G= ' = ' ?A' J A J @?' F@' >F @ ' @B@C=? @' 1CA J ' F@' D@C A?; I ' F ' G= ' DC@ @ ' J =C' A' `6E! "P ' 6 ' 1*3' F@' @=C' ?' F= ' = @' ' <@' F@' I A? FA @' ?' F ' =?E' F@' C ' ' <@' F@' I A?' I@ AG ' F@' G= F' G= ' ?A' EA I ' @ J DAC=C ' FA >F' I ' 1AC' =' J A J @? ' ?' F@' DA @ A?' A1' F@' DC A?@C ' N d

& @' F=B@' @@?' F= ' GF@C@' =' J =?' G@? ' A' I@E' G F' =' DCA @' @=B ?>' F ' G= F' ?' F ' F= ' A?' F@' =I @' =?E' F@' GA J =?' A @' ' GF ' F@' G= ' = @@D' ' G= ' F@ E' ?A ' A' I@' @= ?>' 1CA J ' F@' D@C A?' I ' @= ?>' ?' F@' EG@ ?> FA @' N d

2' J 14 2 '' A1' +'' +44/ ; "4' DA?' F@' C = ' A1' =? ' ?E J @? ' 1AC' @= ?>' 1CA J ' F@' D@C A?% 1' ?A' = DAC = A?' I@' DCAB@E' F@' Z C ' J = ' A?B ' F@' DC A?@C' A1' =?' = @ J D ' A' A J J ' F= ' A11@? @' ?E@C' F@' :' , ' 8' 3 @ ' ' ' =?E' F@C@ DA?' F@' J = ' I@' D ? F@E' ?' F@' = J @' J =??@C' = ' 1' F@' F=E' I@@?' A?B @E' A?' =?' ?E J @? ' 1AC' F' = @ J D ' 1i C3

Wwb' J S.' "' .GE
"3B J .' "' EI
R B /) ' ; "=2 ' /+(=' ' IG. '
/(J =' ' =+ :' 9/' 492<) 94' 49/' ; ' 2(4# 2&' 49/' 6<:)/=' '' 92 ; "=2 ' S=' 1+=/' .' 7/(/' ( ) 94? 3<4' 49/' ; +62(4# ;) 94' 9+J/

492<) 94' 49+4' 49/' 2<4/(' 12+4' 79 19' 12J/(/ :' 49/' "210/4 &2(; / :' + "(24/14 2 '' 42' 49/' "210/4 3220
" B' /V' + ; *42 ' ' E' ' ' IN'
+^ /' "' YA' + ' :' =//' 249/(' 1+=/=' 49/(/
"*' B //' J2*' .' "' YG

‘ ‘ L

L‘ !‘ ‘ ‘ ‘

8 ‘ F=B@‘ = C@=E ‘ @@?‘ F= ‘ =C @? ‘ J = ‘ I@‘ A J J @E‘ A1‘ F‘ EA J @ ‘ C@= C@ ‘ = ‘ =C@‘ 1 ‘1AC‘ 1AAE;‘ =?E‘ C@C = ? ‘ A? ‘ A‘ ?A @‘ ?‘ F ‘ D = @‘ F@‘ = = I @‘ DCAB A?;‘ GF F‘ 1AC‘ F@‘ I@ @C‘ DCA @ T A?‘ A1‘ A J @‘ A1‘ F@‘ J AC@‘ B= = I @‘ EA J @ ‘ =? J = ‘ J =<@ ‘ D@C A? ‘ 1A ?E‘ > ‘ A1‘ @= ?>‘ F@ J ‘ = I @‘ A‘ C=? DAC = A?

‘ F@‘ - :‘ ,‘ - 8‘ 3 @ ‘ ‘ d ‘ ‘ ‘ ? GFA A@B@C‘ F= ‘ @= ‘ =? ‘ FAC @‘ J =C@‘ >@ E ?>‘ A ‘ AC‘ 1 ‘ AC‘ =? ‘ I ‘ AG‘ A] ‘ F@ 1@C‘ AC‘ = 1‘ AC‘ =? ‘ C= J ‘ @G@‘ F@@D‘ AC‘ = J I ‘ F= ‘ I @‘ > ‘ A1‘ 1@ A? ‘ =?E‘ I@ ?>‘ A?B @E‘ F@C@A1‘ F= ‘ I @‘ = I @‘ A‘ C ‘ A‘ I @‘ <@D ‘ ?‘ D@?= ‘ @CB E@‘ 1AC‘ =? ‘ @C J ‘ ?A ‘ @] @@E ?>‘ 1A C @@?‘ @=C ‘ =?E‘ ?A ‘ @ ‘ F=?‘ FC@@‘ 163‘ @=C % ` AC‘ A‘ I @‘ J DC A?@E‘ 1AC‘ =? ‘ @C J ‘ ?A ‘ @] @@E ?>‘ GA‘ @=C ‘ G F‘ AC‘ G FA ‘ F=CE‘ = I A C‘ =?E‘ G F‘ AC‘ G FA ‘ A =C ‘ A?1 ?@J@? ‘ 1<3

@ ‘ ‘ 7 & FA A@B@C‘ F= ‘ G 1 ‘< ‘ =? ‘ =? J = ‘ G F‘ D @? A‘ @= ‘ F@‘ =C = @‘ < ?‘ AC‘ =? ‘ D=C ‘ A1‘ F@‘ =? J = ‘ A‘ < @E‘ F= ‘ I @‘ > ‘ A1‘ 1@ A? ‘ =?E‘ I@ ?>‘ A?B @E‘ F@C@A1‘ F= ‘ I @‘ = I @‘ A‘ F@‘ = J @‘ D ? F J @? ‘ = ‘ 1‘ F@‘ F=E‘ I@@?‘ A?B @E‘ A1‘ 1@ A? A ‘ @= L‘ ?>‘ F@‘ = J @‘ DCAB E@E‘ F@‘ A11@? @‘ A1‘ @= ?>‘ F@‘ =? J = ‘ A‘ < @E‘ GA E‘ F=B@‘ = J A ? @E‘ A 1@ A? ‘ N d

‘ @ ‘ 9‘ 1#3‘ DC ? D= ‘ ?‘ F@‘ @ A?E‘ E@>C@@‘ =?E‘ = @ AC @ ‘ I@1AC@‘ F@‘ 1= ‘ =C@‘ D ? F=I @‘ <@‘ DC ? D= ‘ ?‘ F@‘ 1 C ‘ E@>C@@‘ =?E‘ = @ AC @ ‘ =1 @C‘ F@‘ 1= ‘ N@] @D ‘ C@ @ B@C d‘ =C@‘ =I @‘ A‘ I@‘ J DC A?@E‘ 1AC‘ =? ‘ @C J ‘ ?A ‘ @] @@E ?>‘ GA‘ @=C ‘ N@d

F@‘ B=C A ‘ DA ? ‘ DA? ‘ F@‘ E@1 ? A?‘ A1‘ =C @? ‘ GF F‘ F=B@‘ I@@?‘ A? E@C@E‘ ?‘ F@‘ F=D @C‘ C@= ?>‘ >@?@C= ‘ A1‘ F= ‘ A11@? @‘ 1*3‘ C@ = @‘ = ‘ G@ ‘ A‘ F@‘ @= ?>‘ A1‘ FAC @ ‘ = ‘ A1‘ A F@C‘ DCAD@C ‘ =?E‘ G@‘ J = ‘ C@ J @ J I@C‘ =‘ = @‘ GF@C@‘ DA?‘ =‘ 1 ?E ?>‘ I ‘ F@‘ Z C ‘ F= ‘ F@‘ DC A?@C ‘ AA<‘ A J @‘ FAC @ ‘ J @C@ ‘ G F‘ ? @? ‘ A‘ C E@‘ =?E‘ =1 @CG=CE ‘ A‘ @=B@‘ F@ J ‘ =?E‘ ?A ‘ A‘ C@ C?‘ AC‘ J =<@‘ =? ‘ 1 C F@C‘ @‘ A1‘ F@ J ‘ ‘ G= ‘ FA E@?‘ F= ‘ F‘ =< ?>‘ = J A ? @E‘ A‘ =‘ C@ D= ‘ A? ‘ =?E‘ ?A ‘ A‘ =C @? ‘ 123

2 ‘4=‘ (/*+4 ‘)‘ 42‘ 92 =/ ‘ =4/+* ‘)‘ +(=/‘ +=‘ ‘‘ *+(1/‘ /=‘ 2& 49/(‘‘(2P ‘‘/(4#

4& ‘)‘ +‘ P ; +*=‘ 7 49‘ ‘P 4/ ‘ 4‘ 42‘ =4/+* 49/‘ 1+(1+=/‘ 1

" B 24‘ */=‘ 49+‘‘ & J/‘ #/+(=‘ &‘ 49/‘ 2&&/ ‘ 1/‘ 7+=‘ 12 ; ; 44/ :‘ +&4/(49)‘ GA49‘ 2& <*#‘ .EYI ‘ //‘ J2*‘ .‘ ‘‘ ‘ DH

" B 9 =‘ 1*+<=/‘ =‘ &(+ ; / :‘ &(2 ;‘ 49/ D‘ ‘ E ! /2‘ I ‘ 1‘ GN‘ = ‘ GA‘ ? N‘ ! /2‘ I ‘ 1‘ YA‘ = ‘ GA‘ W b ? G‘ ‘ H‘ **‘ I ‘ 1‘ YG‘ = ‘ . ‘ 1‘ =‘ 42‘ 9+(:‘ *+32<(‘ 1‘ =/‘ ==‘ . .D‘ . .E‘ . .N‘ J2*‘ .‘ ‘‘ EM‘ E . ?‘ +=‘ 42‘ 2&&/ ‘ 1/=‘ +4‘ =/+‘ =/‘ =/1‘ . .A‘ J2*‘ & ‘ ‘‘ ‘ . I

W1 9 =‘ 1*+<=/‘ =‘ &(+ ; / :‘ &(2 ;‘ 49/‘ D‘ 1‘ > ‘ H‘ 1‘ GN‘ = ‘ GA‘ + ‘ :‘ N ! /2‘ I ‘ 1‘ AA‘ = ‘ GA‘ ‘‘% B ‘ &+(‘ +=‘ 4‘ (/*+4/=‘ 42‘ 49/‘ + ‘ ; +*=‘ ; / ‘ 4 2 ‘ / :‘ ‘‘ 49/‘ ‘‘(/1/ : ‘)‘ =/1P 4 2 ‘ ‘ ? 3<4‘ 4‘ =‘ /V4/ ‘ : / :‘ 42‘ 49/‘ ‘ O ** ‘) ‘ 2& + ‘ # 249/(‘ + ‘ ; +*‘ 7 49‘ 49/‘ * O/‘ ‘ 4/ ‘ 4‘ ‘‘(2J : / :‘ 49/‘ =4/+* ‘)‘ 2& ‘ =<19‘ + ‘ ; :‘ 72V * :‘ 3/‘ &/*2 ‘ #‘ 9 =‘ 1*+<=/‘ 49/(/&2(/‘ 7 **‘ ‘ 1*<: /‘ 49/‘ O ** ‘) ‘ 2& +==/=‘ ‘‘) =‘ 2 ‘ 7 49‘ ‘ 4/ ‘ 4‘ 42‘ =4/+* ‘ 1‘ ? +=‘ 42‘ 9+(:‘ *+32<(‘ 2 ‘ =/ /‘ ‘ 24/‘ WY ‘ K +=‘ 42‘ 2&&/ ‘ 1/=‘ +4‘ =/+‘ =/ /‘ =/1‘ . .A ‘ J2*‘ . ‘ ‘‘ ‘ . I ‘

" B J ‘ J2*‘ . ‘ ‘‘ ‘ .EA W] ‘ =‘ 42‘ 49/‘ ‘‘(21/ : ‘)=‘ +)+ ‘ =4‘ +1 ‘ 1/ ==2(/=‘ =/ /‘ J2*‘ . ‘ ‘‘ ‘ .DI ‘ O‘ 9/‘ 1‘ : 2/=‘ ‘ 2‘ /V4/ ‘ : ‘ 42‘ 124*+ ‘ : W w b ‘ J S.‘ D‘ .GA‘ ‘ O‘ S "3 ‘ /V ‘ 9 ** ‘‘= ‘ G‘ +=4‘ ‘ ‘ 1‘ : ‘ =‘ NE‘ ‘‘ ‘ ((

9 "(=2'/(7+ : 14/: &2(=4/+* ') + ; 3= + ' : 49 /J : / '1/ 7+ 49+4 492 1+(P 1+=/ 7/(/ &2<' : 49 /) (2<' : 2& 49/ 27 '/(+ ' : 49 / =0 '2 2 '*# 4+0/ '+7+#th +' : + 12 'J 1P 4 2 '' <"2 '' 49 /J : / '1/ 7+ 92*: / '' ( )94

F@ EA C ?@ F= =? F@ @= C@J AB= A1 F@ F ?>1@ A? A =1@@? YG A? @ =C @? 1<3 =DD @ A F@ @= ?>A1 F@@D FA >F D=C A1 F@ =? J= A? I@ =<@? F@ DC A?@C G= ?E @E 1AC @= ?>] =J G FA =? A ?1AC < ?>G F ? @? A @= F@ =C = @ AC =? D=C F@C@A1 F@ @B E@? @G= F= F@ =C = @ A1 F@ =J I G FA F@ C < ? G@C@ 1A ?E DA?' F@ DC@J @ GF@C@ F@ F=E' I@@?' <@D =?E F= F@ DC A?@C F=E A E F@ < ? A?' F@ J AD? ?>=1 @C F@ A11@? @G= AJ J @E; DA?'GF F' F@Z C G@C@E C@ @E A1 ?E F@DC A?@C > A?' F@ >CA ?E F= F@ =J I J F=B@ I@@?" &4 #* "4 & < *4 # =EA I F=B ?> A CC@E GF@ F@C = F@ :' @A -' N?AG C@D@= @Ed D@ 1 @E 1@ A? A EC B ?>=G= =?E 1@ A? A < ?>G F' ? @? A' @= F@GFA @ AC =? D=C A1 F@ =C = @ G@ =1 @ A? A < ?>G F' ? @? A' @= D=C A1 F@ =C = @ 11 @? F@1 C A ?' F=C>@E F@DC A?@C G1 F @= ?>FC@@ F@@D =?EEF@ @ A?E G F< ?>F@ F@@D G F ? @? A' @= F@ GFA @ A1 F@ =C = @ =DD@=C@E F= F@ F@@D G@C@ 1A ?E < @E =?E AD@?' =?E F@ ? E@ =?E @? C= =<@?A =?E F@ = EG =?E ? E@ 1= =<@? =G= =?E F@ 1= A11 F@ I= < A1 GA A1 F@J =?E= A =<@? =G= I F@ 1= A? F@ I= <A1 F@ F CE G= @1 F@ =C = @ A1 F@ F@@D G@C@ @1 =?E G@C@ 1A ?E ?>?' F@ >C D@ A1 F@ F@E>@ ?' F@ =J @ 1 @ E GF@C@ F@ B@ F@@D F=E I@@?; F@ @? C= =?E > GF F C@J =?@E =1 @C F@ = AG =?E ? E@1= F=E I@@?' A G@C@ = A @1 =?E G@C@ 1A ?E ?' F@ =EZA ? ?>1 @ E F@C@ G= @B E@? @ A = 1 F@ 6< # F= F@ DC A?@C F=E < @E F@ F@@D =?E A @?' F@1= ; I = F@ =C = @ A1 F@ F@@D =?E F@ @? C= =?E > =1 @C ?>=G= F@ = AG =?E 1= G@C@ @1 F@ @=C?@E Z E>@' FA >F F@ @ A?E A ? Y11 F G= 1AC < ?>F@ F@@D G F ? @? A @= F@ GFA @ A1 F@ =C = @ A E ?A I@ DDAC @E =?E F= F@ ? @? A >F A F=B@ I@@?' = @E A @= D=C A1 F@ =C = @ ; ?= J F = F@ :' @A -' - D@ 1 @ IA F ? @? ! @ @= ?>F@ GFA @ A1 F@ =C = @ AC =? D=C A1 F@ =C = @ ; =?E F@ ?>A F@ ? E@1= A?@ A1 F@ A11@? @ @E ?' F@C@ = A1 F@ = @ ?' F@ = @ 1C3 F@ A ? 1AC @= ?> F@ @=C?@E Z E>@' = W ?' F@ =I @? @ A1 =? = @ A F@ A? C= G= E DA @E A F ?< B= ?A DDAC @E; 1AC F@ = @ F=B ?>=<@?' =G= @C> 1CA J' F = @@ F@@D =?E F=B ?> ?' F@ =J @ = @ J=E@>RIL?

" B J .' " .GA /V □ ' 247/** W M 4AY " B +7* '=$ 1+=/ G +=4 1 .Y 49+4 & +=4+4<4/ <=/ 72(:= 49/ +# /(1 .' " Y,D '+4 J/ ' 2 2= 42 : =4) < =9 I 9 "*B ; /V X 1(; 24 49/ ; 49/ : =4 14 2 ' ; <=4 3/ +44/ ' : / : HAY /V □ ' <&& ' ; HYA' +' : 42 ' 49/ ' : 14 ; / '4'

GNM

8 3 P . N . $% &

+44 ')' 2& "+(4 e& +' =4/ / "' 79 *=4 +* J/ ' 7 49 ' 4 - 4 42 =4/+*' =' =<&& [' : / ' 4 &' : /+49 ; <=4 /<=44/

' G= ' E@ E@E' DA?' F@' :' @A ' -% ' % F= ' ?>' A11' D=C ' A1' =' F@@D' G F ' ' G= ' = B@' G F' ? @? ' A' @=' F' D=C ' GA E' DDAC ' =?' ?E J @? ' 1AC' < ?>' G F' ? @? ' A' @= % 1' F@' ?>' A11' J ' A = A?' F@' E@= F' A1' F@' =? J = 3 '@ D@ = ' 1' F@' A11@?E@C' F E' F@' D=C ' ' A11% =?E' J @=? ' A' 1@ F' ' =G= ' = ' =' 1 C@' Ju ' F@' ?E J @? ' G= ' 1AC' < ?>' =' = J I ' G F' ? @? ' A' @= ' D=C ' A1' F@' =C = @' % =?E' ' =DD@=C@E' F= ' F@' DC A?@C' ' A11' =' @>' 1CA J ' F@' =? J = ' G F ' ' G= ' = B@% =?E' =CC @E' ' =G= ' I@1AC@' F@' =? J = ' E @E' ;' I ' F= ' F@' ?>' ?@ @ =C ' = @E' F@' E@= F' A1' F@' =? J = ' = @ % % FA >F ' F@' > B ?>' F@' E@= F' GA ?E' I@1AC@' F@' =C @? ' 11 @? % =?E' F= ' F@' =? J = ' J >F ' I@' A?T E@C@E' = ' < @E' I ' C@ = A?' 1CA J ' F= ' J @% AC' 1' ?A % F= ' F@' ? @? A?' A' 1@ F' =G= ' F@' @>' G!= ' =?' ? @? ' A' A? ? @' F@' =C @? ' F@C@A1' ;' I ' F@' =B@E' F@' DA ? ' 1AC' F@' AD ? A?' A1' F@' Z E>@ % GFA' G@C@' ?=? J A % DC ? D= ' DA?' F@' 1 C ' DA ? % F= ' F@' A?B A?' G= ' C >F % 1"!3

DA?' =?' ?E J @? ' 1AC' < ?>' =' F@@D' G F' ? @? ' A' @= ' F@' =C = @% ' =DD@=C@E' F= ' F@' DC A?@C' G= ' ? @CC D @E' I ' F@' DCAT @ AC' GF @' ?' F@' = ' A1' < ?>' F@' F@@D% GF F' G= ' GA ?E@E' ?' F@' FCA= % F@' Z > =C' B@ ?' I@ ?>' ' A?' A?@' E@% I ' ?A ' = A>@ F@C' FCA >F ' F@' GA ?E' G= ' @G?' D% I ' F@' F@@D' E @E' ?' GA' E= ' F@' Z C ' F=B ?>' 1A ?E' F= ' F@' DC A?@C' >=B@' F@' F@@D' =' E@=E ' GA ?E% A1' GF F' ' E @E% G F' ? @? ' A' @= ' F@' =C = @% G@C@' E C@ @E' A' 1 ?E' F@' DC A?@C' > ';' =?E% DA?' =' = @' C@ @CB@E% F@' Z E>@ ' G@C@' ?=? J A ' A1' NJ ? A?' F= ' F@' DC A?@C' G= ' C >F ' A?B @E% NAd

' ' : 14 ; / ' 4 &2(' =4/+* ')' +' N' 9/ * :-' ' 24 42' 3/' =<" "2(4/ :' 3# /J : / ' 2]' 2& =4/+* ')' +'

& F@C@' F@' DC A?@C' G= ' ?E @E' 1AC' @= ?>' =' 45 ' ' =DD@=C@E' Y DA?' F@' @B E@? @' F= ' F@' =? J = ' A @?' G= ' =' 1@ J = @' I@= ' A? ' GA' @=C ' =?E' =' F= 1' A E' F= ' F=E' ?@B@C' F=E' =' = 1' ;' =?E' F= ' =' 1@ J = @' I@= ' A1' F@' AG' < ?E% FAG' A E' A@B@C% 1' F@' F=B@' ?@B@C' F=E' =' = 1% ' = G= ' = @E' 6' < !* " ' ?' AIZ@ A?' G= ' F@C@1AC@' =<@?' F= ' F@' F=C>@' ?' F@' ?E J @? ' G= ' ?A ' DDAC @E' I ' F@' @B E@? @' ;' =?E% DA?' =' = @' C@ @CB@E% F@' Z E>@ ' G@C@' A1' AD ? A?% F= ' = ' F@' 8' @a' -% ' :' N?AG' C@D@= @Ed% J @? A?@E' IA F' < !* "' =?E' 45 ' J ' I@' @A? E@C@E' = ' ?>' A?@' @C J ' ?' A? C=T E ? A?' A' F@' A F@C% =' E@ C I ?>' F@' @B@C= ' =? J = ' ? @?E@E' A' I@' DCA @ @E' ;' =?E' F= ' = ' F@' I@= ' A @?' G= ' ?A ' F' = ' G= ' E@ C I@E' ?' F@' ?E J @? % F@' DC A J C' G= ' @? @E' A' =?' = b = % *E 3

A' GF@C@' F@' DC A?@C ' G@C@' ?E @E' ?E@C' Fu' = J @' C@D@= @E' = @' 1AC' @= ?>' 1 B@' F@@D% =?E' DA?' F@' @B E@? @' F@ ' =DD@=C@E' A' I@' = J I % =?E' F@' DC A?@C ' G@C@' 1A ?E' > ;' F@' Z E>@ % DA?' =' = @' C@ @CB@E% F@ E' F@' A?B A?' GCA?>% 7*3' A' GF@C@' F@' DC A?@C' G= ' ?E @E' 1AC' @= ?>' =' F@@D% =?E' ' =DD@=C@E' F= ' F@' =? J = ' A @?' G= ' =' @G@% =?E' F@' DC A?@C' G= ' 1A ?E' > ';' F@' Z E>@ % DA?' =' = @' C@ @CB@E% ' F@ N ' F@' A?B A?' GCA?>;' ?= J F' = ' F@' = @' D@ 1 @ ' I A F' @G@' =?E' F@@D% =?E' F@C@T 1AC@' F@' A?@' C@= ' J @=? ' FA E' I@' = @E ' NCd' A' GF@C@' F@

=92<*:' =// ;' 49+4' "<' =9 ; / ' 4 72<*:' 3/' <' :/ (' 49/' D' 'E' !/2' I' 1' GE' ==' E' 'N' +' :' ' /4' 1' NM' =' A' ? J2*' .' "' YA'

" B' /V (' *+#' ' +#6/#' ' +' :' ' ' ' HED W2b' /) ' <442 ' ' G' 22' M ' '

GN' E' ' ' ' GN. '

" B' (2208=' /+=/ ' .' /+19' .MA' G' +=4 ' ' 1' .Y' =' IE' "' Y.Y ' 0' 22 ; ' ' ' ' ' ' ' -' " B' 0' <: &224' ' ' ' ' ' J' ' GID

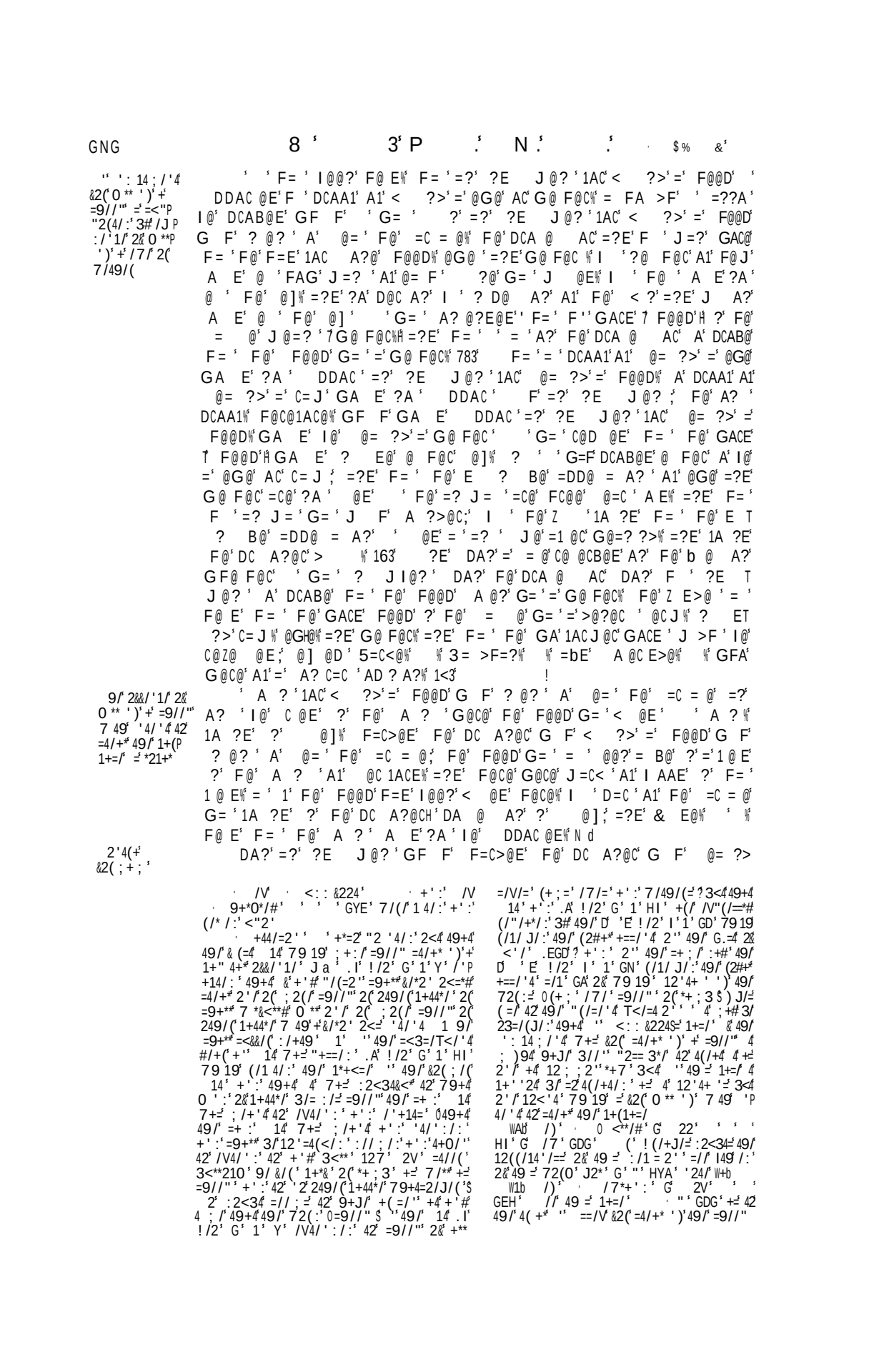
DC A?@C G= ?E @E 1AC @= ?>A?@ F@@D =?E =DD@=C@E F= F =?J= A @?G= ?E@C=E @=C A E =?E F@DCA @ AC = E F@ FA E = = =J I @>;; A =?E = E 7 DA?F @B E@? @ J E C@ =?= b = ?F F ?E J@? F@ =? J= A1 F < ?E =C@ =J I =?E?A F@@D F@ =C@ = @=C A E ! F@C@G= = @ 1(3 = @ I@1AC@ F@ G@ B@ Z E>@ ?GF F=J=?F=E I@@? ?E @E = F@ E' = @ =?E C @E I@1AC@ * C 5=C<@ 1AC @= ?>[A?@ F@@D n =?E =DD@=C ?>= F@ C = F= F@=? J= G= =@G@ F@ G@ B@ Z E>@ F@ E F= F@DC A?@C A E ?A I@ A?B @E = F@ = @ @E F@ GACE [C=J @G@ F@@D n , =?E F= 1 F@ =? J= G= ?=1= =@G@ F@ ?E J@? J A E@ C I@ ;=?E G= ?A @?A >F A @ F@ >?@C= @CJ F@@D 1=@G@ A @? J I@ = @E=@G@ ?F@ ?T E J@? ;=?E A =4 =J I J I@ = @E=J I; I =G@ F@C FA E I@E@ C I@E= = F@@D! H "B & F@C@ A?=?E J@? 1AC @= ?>=F@@D G= EA I 1 A?F@ @B E@? @ GF@ F@C F@ =? J= A @?G= =C >F@@D AC =G@ F@C; E@C A? F@ E F= G= b @ J J= @C = GF@ F@C F@ F@@D G= =C >AC=G@ F@C = F@ DC A?@C G= @b = =I @ A I@ A?B @E A? F ?E J@? GF@ F@C G= A?@ AC F@ A F@C 1>3

F@ DC A?@C G= ?E @E 1AC @= ?>=@G@ =?E G= DCAB@E /7/ 4]) F= G= C= F@C JAC@ F=?G@ B@ JA? F A E =?E F= D A G@ B@ JA? F GA E I@ = @E=J I =?E F= GA E ?A I@ = @E=@G@ F=E F<E=J I =?E F= G= = @E=@G@ >; G= C>@E F= 7@G@H G= =>@?@C @C J 1AC = 1@J= @ F@@D; 5A A < = E F@ A C A E ?A F=B@=? Z E = <?AG @E>@ A1 GF= F@ F@@D FA E I@ = @E 1CA J =J I = @ A F= A1=@G@ =?E A E A? I@> E@E I F@ @B E@? @ =?E F@ E F@ J E@ C D A?1= = N d

F@ DC A?@C G= E @E 1AC @= ?>= F@@D F@ =? J= *+ ;3 ;+# A @?G= I@ G@@?? ?@ =?E G@ B@ JA? F A E =?E F@C@ G= 3/ :/=1(3/:+= @B E@? @ IA F G= +=A GF@ F@C +=! F@@D AC = =J I; =?E F@ Z C 1A ?E F= ?AJ J I?D=C =? @ = ACE ?>A F@ = J AE@ A1 E@ C I ?> F=? J= ?F@ A ?C GA E I@ = @E =J I; =?E DA?= = @C@ @CB@E]Z E>@ F@ E F@ A?B A?C >F I 1 B@ G@C@ A1 F@ A? C=C AD ? A? NGd

?E GF@C@ F@ DC A?@C G= ?E @E 1AC @= ?>= FAC @ =?E :=)/*: =DD@= @E F= F@ FAC @ G= F= 1 AC = ACE ?> A F@ DCA)+=+92(=/ B ? = @CJ F= G!= 7=C E>@ ;H G= AIZ@ @E F= A >F A F=B@ I@@?E@ C I@E= = =>@ E ?>; I C @ F@ E F= 7FAC @H G= =>@?@C @CJ =?E ? E@ =>@ E ?>= =?E F= GF@C@B@C F@C@ =G@ <?AG?>@?@C @CJ AC ?=J @ 1AC DCAD@C J= I@ E@ C I@E I F= ?=J@ ?=?= ?E J@? =?E F= F = @ A E ?A I@ E ?> F@E 1CA J F@ DC@ @E ?> = @ 1?3 F=E I@@?DC@B A F@ E F= =?= ?E J@? 1AC @= ?>=1 ?A DDAC @E I @B E@? @ A1 @= ?>=?=? J= J AC@ F=?FC@@ @=C A E = = FC@@ @=C A1=>@ @= @ A I@=1 =?E I@ AJ@ =J =C@ 123

W=B (23+3*# /V & <: : &224 9 =1+=/7+= '24 +()</: B O (0/4 l G.Y 1?3 /) , * :(:)/ l 2V E. .IH B /V 4(2<: (YHY W##B /) : 7+(: 2'/= 4+&&2(: &B /) , # N ; 2V GGD < ; == .EHN ** + ; = NB /) , " 1/(. /' EG



A?@ J =C@ A?@ =EE @ =?E A?@ IC E @ G FA =? = @>= A?F= F@ A11@? @G= =>= ? F@ 1AC J A1 F@ = @ F@ DC A?@C G= A?B @E =?E @? @? @E A I@ C=? DAC @E I@ A?E F@ @= 1AC 1 1 @@?@=C ;=?E DA?@CCAC G= AIZ@ @E F= ?A D=C A1 F@ F=C>@ G=CC=? @E F@ @? @? @ GF F G= @? C@ = =I @; I F@ A C A1W @@?H @? F F@ E F= = F@ @= ?>> F@ J =C@ = G@ = @= ?>> F@ =EE @ =?E IC E @ G= =1@ A? = AJ JA?=G =?E?A C@= @E AC = @C@E ?! ?= C@ I F@ . , 9 @A : - -8 F@ - , & : -= =?E F@ 3 @ = F@ A11@? @G= ACC@ E@ C I@E ?F@ ?E J @? =?E F@ @? @? @ A1 1 1 @@?@=C H C=? DAC = A?C >F 7#3

F@ - @A = . G= D= @E ?ACE@C A C@J @E F@ GY ! /2 E 1=@ =11ACE@E A F@ @= ?>A1 = @ I D@C A? A1 AG A?T =*+<)94/(<)' E A? GFA <@D FA @ AC D = @ 1AC F@ D CDA @ A1 = >F @C ?> 1+44*/ FAC @ =?E A F@C = @ DCAB A? J = I@ FAC J @? A?@E ?F D = @ A? = ? J =? @?= J @? 1AC F@ C@> = A?A1 = >F @C FA @ ; C@b C@ D@C A? <@@D ?> F@J A =<@ A = @? @ =?E A > B@ ?A @ DC@B A A F@ = >F @C ?> =?E 1 = ?> A1 =? = @ A =?& F@ = @ A? G F ?@C = ?FA C F@ *+<)94/(')' @ >F F @ A?@?= F = 1 =? D@C A?<@@D ?> AC ?> =? (+44*/ 7 492<4 = >F @C ?> FA @ AC D = @ J @? A?@E ?F@ F= = >F @C) J ')'(2"/(=? = @ 1AC =? A F@C D CDA @ F=?1AC I F@CH J @= AC F= 1 =? = @ ICA >F E@=E A F >F @C ?> FA @ AC A F@C D = @ G FA =? @?! @ DC G FA > B ?> ?A @ AC F= = >F @C AC 1 = =? = @ J @ @] @D G F ?F@ FA C J @E I F@ AC F= ?A E@ = = >F @C ?> AC < ?> = ACE ?> A F@ E C@ A? A1 F@ ? D@ AC DCAD@C = FAC @E F D@C A?A 11@?E ?> ? @ F@C A1 F@ @ = @ =?E I@ ?> A?B @E F= I@ =EZ E>@E =?E =<@?A I@ > A1 1@ A? =?E F= I@ D ? F@E I 1 ?@ =?E J DC A?J @? =?E F ACDAC= D ? F J @? I D I AC DC B= @ GF DD ?> AC F= I@ C=? DAC @E 1AC =? @C J ?A @] @@E ?> @B@?@=C N d= F@ A C I@1AC@GFD J F@A11@?E@C F= I@ C @E! =?E A?B @E F= E C@ N d F@ ? ? F @ A?@?= F= /=4(2# ')'2(D@] A? <@@D ?> AC Z ?> F = >F @C ?> FA @ AC D = @ =?E 3<(# ')'9 :/= FCAG ?> ? A J @ =?E C II ?> F@C@G F AC G F =? A F@C ; =:/ ; /+'2(ACCA B@ J = @C AC E@ CA ?> AC I ! ?> F E@ A1 = @ = >FT @C@E AC 1 = @E I F@ J F= I@ > A1 =J E@ J @=?AC D ? FT =I @ I 1 ?@ J DC A?J @? =?E GF DD ?> F@ = @ = A C@= @ A F@C A11@? @ A1 = J = @C E@>C@@ =?E JDA @ D@?= @ C@ AB@C=I @ I J J =C DCA @@E ?> I@1AC@Z @ A1 F@ D@= @ F@ 1A C @@? F @ A?DCAB E@ F= F@ F= ?A @] @?E A] @DRA? =? ? @C 1@ J =<@C =??@C AC E@= @C ?F E@ GFA F= < =F E @ J D@C@E AC =>@E = @ AC D C F= @ =? E@=E FAC @ D CDA @ A1 @ ?> ?> AC C ?> F@ F E@ F@C@A1 ?F@ A C @ A1 F@ C C@ D@ B@ C=E@ ; ?AC A =? 1=CC @C @J D A @E A < =>@E =?E E @J D@C@E = @; ?AC A =? D@C A?GFA F= < =? A1 F@ C AG?AC A F@C = @ AC D C F= ?> =? E@=E FAC @

" B ** + ; & 9 </// D GAM .EIA ' /) X /7*+' : G 2V GEH .EID *: / # .' 0+ -"(/==/ : +' 12 '4(+(# 2" ' 2 ' 3<4 '2+< -492(4# 7+ 1 4/ : W/ 27 6V/'+ =/(J 4<: / 42 49/

4/(; 2&"/ '+ =/(J 4<: / =/ J2* .' "' DH Ww /I +' "(/1/ : / '4 2&+' =*+') 94/(02 7/ ' +)+ '=4 49/ 0//"/(2& +' =*+')94/(02 7/ ' &2(=*+<)94/(') +' 92(=/ 7 492<4) J ') ' 49/ "(2"/('24 1/ ' H 9 4 &4 ; DG.

- : 8 3 P . N . . 4 $% & 3

AC A F@C = @% A 1@@E F@ C AP ?FA ?E AC EA> % AC > B ?> =G= F@ 1 @ F 1AC F@ F@ D CDA @ 1 C F@C @?= @E% F= 1 =? A =C J =<@C% CC @C% , AC A F@C D@C A? F= % ?E@C A A C A1 F@ C C=E@ % <?AG ?> AC G ?> < =? A ?E AC @1 FAC @% >@ E ?>% J =C@% 1A= AC 1 % AC I A AC A F@CG @ C@ F@ 1 @ F F@C@A1 1AC F@ D CDA @ A1 @ ?> % F D@C A? F= F@ E@@ J @E =? A11@?E@C G F ? F@ J @=? ?> A1 F@ % =?E 1AC @B@C A11@? @% 1AC1@ =? J ?A @] @@E ?> G@? %!?AC @ F=? @? DA ?E % "3B

h 14 2+ 2& + '+44/ ; 6 4 DA? F@ C = A1 =? 1@ A? J @? A?@E ? F F=D @C F@ Z C J = % ?E@C F@ : , 8 3 @ % I !3 A?B F@ DC A?@C A1 =? = @ J D A AJ J F@ = J @% =?E F@C@ DA? F@ J = I@ D ? F@E ? F@ = J @ J =??@C = 1 F@ F=E I @@? A?B @E% DA? =? ?E J @? 1AC F = @ J D

123 GY ! /2 H 1 D. = .A 9/ D E /4 1 ED 7 9 19 (/1 4/= 49/ "(/1/ :) 14 12 '4+ '= ; + '# + : : 4 2 '+* "(2J = 2 '= &"((/)<*+4 ')'"*+1/=0/"4&2(=*+<)94/(')92(=/= ? + ' :49/ .G .H /4 2 NG (/P "/+*=49/ A Y) 1 AN 7 9 19 (/? *+4/ :42 49/ =+ ; / =<36/14 + ' :12 '4+ '= ; + '# (/)<*+4 2 '= 2 '49/ =+ ; / =<36/14=m 3<4 '2 ' / 2& 49/ ; &+**= 7 49 '49/ =12"/ 2& 49 = 72(0)Lo 2* . "YG

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/ ;' F@' G I' 'GA' 3 @ ' 'NY ' ' .E' !' GFA A@B@C' F= ' @= ' =? ' N A>' @= ?>' :2)=' F= ' A?' A?B A? F@C@A1' I@1AC@' GA' Z @ ' A1' F@' D@= @' @ F@C' I@' AJ J @E' A' F@' AJ JA?' >=A 'AC' FA @' A1' ACC@ A?' F@C@' A' I@' JDC A?@E' AC' A' I@' JDC A?@E' =?E' <@D ' A' F=CE' =IA C' 1AC' =? ' @CJ ' ?A ' @] @@E ?>']' JA? F ' AC' F= '1AC1@ ' =?E' D= ' AB@C' =?E' =IAB@' F@' B= @' A1' F@' = E' EA>' F' J 'A1' JA?@ ' ?A ' @] @@E ?>' G@? 'DA ?E ' = ' A' F@' = E'Z @ ' F= ' @@J ' J @@ ';' =?E' GFA AT /12' : @B@C' F=B ?>' I@@?' A?B @E' A1' =? ' F' A11@? @' ! < '" =>= ? ' F ' 2&&/ ' 1/ 4"' 6 ' '*4!(& "' ' A1' 5=C =J @? ' F= ' =1 @CG=CE ' @= ' =? 'EA>' F= ' I@' > ' A1' =' J E@J @=?AC' =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @' = ' F@' E C@ A?' A1' F@' A C ' A' I@' JDC A?@E' 1AC' =? ' @CJ ' ?A ' @] @@E ?>' @ >F @@?' JA? F ' G F' AC' G FA ' F=CE' =IA C H N=d' H 4

@ ' ' 7 & FA A@B@C' F= ' ? =G1 ' F=B@' ?' F ' DA @ A?' AC' 2=/=b 2" 2& A?' F ' DC@J @ ' =? ' A @?' EA>' AC' F@' < ?' A1' =? ' A @?' EA>' =42*/ ' :2)= <?AG ?>' F' EA>' A' F=B@' I@@?' A @?' AC' F' < ?' A' I@' F@' < ?' A1' =' A @?' EA>' F= ' A?' A?B A?' F@C@A1' I@1AC@' GA' Z @ ' A1' F@' D@= @' I@' =I @' A' D= ' F' J ' A1' JA?@ ' ?A ' @] @@E ?>' G@? 'DA ?E ' = ' A' F' Z @ ' F= ' @@J ' J @@ ';' =?E' GFA AT /12' : @B@C' F=B ?>' I@@?' A?B @E' A1' =? ' F' A11@? @' ! < '" =>= ? ' 2&&/ ' 1/ F ' 4"' 6 ' '*4"& "' ' A1' 5=C =J @? ' F= ' =1 @CG=CE ' F@' > ' A1' =? ' F' A11@? @' = ' ?' F ' @ A?' I@1AC@' J @? A?@E' F= ' I@' > ' A1' =' J E@J @=?AC' 6 #' : ! 2' 4 ! #' < " 4*' <6 ' : ' !6 : ' 6 ' < ' #! " !4 ' 4*' < ' J 4>" ' 4' : '!& E"! 4 #' *4"' 6 ' ' "&' 4 ' ? #! 2' !2< ' & 4 < ' 5 ! <' 4"' 5 ! <4> ' <6 (#' 6 : 4>"j' N d

@ ' - ' 7 & FA A@B@C' F= ' ACC D ' =<@' =? ' JA?@ ' AC' C@T +0 ')' ; 2"/# G=CE' E C@ ' AC' ?E C@ ' ?E@C' DC@ @? @' AC' DA?' = A ?' A1' 42' #1=41(/ = E ?>' =? ' D@C A?' A' C@ AB@C' =? ' EA>' GF F' F= ' F=B@' I@@?' A @?' AC' GF F' F= ' I@' ?' F@' DA @ A?' A1' =? ' D@C A?' ?A ' I@ ?>' F@' AG?@C' F@C@A1' F= ' I@' > ' A1' =' J E@J @=?AC' 6 #' : ! 2' 4 ! #' < " 4*' <6 ' < ' !6 : ' 6 ' < ' #! "L !4 ' 4*' < ' J 4>" ' 4' < ' !& E"! 4 #' *4"' 6 ' ' "&' 4 ' ? #! 2' !2< ' & 4 < ' 5 ! <' 4"' > <4> ' <6"#' 6 : 4>"j' N d

@ ' - ' 7 & FA A@B@C' F= ' @= ' =? ' I CE' I @= ' 4"' 4 < "' 6 !& 6 ' 4/+* ')' ACE ?=C ' <@D ' ?' =' = @' A1' A?1 ?@J @?' 4"' *4"' 6 ' '#4& ! 'E>" 3/+=4=' 2(3 (:=' 2(: ' +(*#

" B' 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' E '(2J = 2 '' ''49/' . I' ' .A' /4' 1' NG' =' A' 4*b' =' 42' 9+(:' *+32<(' 1' =//' : N' /4' 1' ID' =' G' 9/(/' 7+=' +' = ; *+("' A. ' J2*' . ' "" "' EM' E.' ? +=' 42' + : /(=' +' :' "(2J = 2 '' ''49/' . I' ' .Y' 14' 1' NG' =' A' W b' =' 42' 9+(:' *+32<(' 2' =/' J2*' . ' +3/442(=' =//14 &/' '' A. ' J2*' . ' "' .EA "' "' EM' E. ' ' "' A. ' J2*' . ' "' .EA W1b' 9 =' 1*+<=/' =' 4+0/ '' &(&J ;' 49/' E +3/442(=' =/' : "' A. ' J2*' . ' "' .EA ' N' /4' 1' ID' =' Y' +' :' /V4/ ' : /:' 42' " B' 9 =' 19+<=/' =' 4+0/ '' &(2 ;' 49/' E ' (/*+' : ' =' 42' 9+(:' *+32<(' 1' =/' / ' :' N' /4' 1' ID' =' H' 9/(/' 7+=' +' = ; *+(2&' 24/' R B'

8 ' 3'@ 3 .' f

O/"4 "'12'P & '/ ; /'4'+' :' '24 49/'=<3P 6/14=' 2& *+(P 1/'#

E4 ' ?A ' I@ ?>' F@' IZ@ ' A1' =C @? ' = ' AJ JA?' =G% 4"' <6 ' 5 ! *> ' ' ! '6 ' ' > <' : !"# ' : 6 ' 4"'6 !& 6 ' 5 ! <' ! ' 4' 6 ' < ' 6& ' 4"' 6 ' 'E6" ' < " 4* ' F= %A?' A?B A?' F@C@A1' I@1AC@' =' Z @' A1' F@' D@= @% = ' F@' E C@ A?' A1' F@' Z @% @ F@C' I@' AJT J @E' A' F@' AJ JA?' >=A ' AC' FA @' A1' ACC@ A?% F@C@' A' I@ JDC A?@E' A? % AC' A' I@' JDC A?@E' =?E' <@D ' A' F=CE' =IA C' 1AC =? ' @CJ ' ?A ' @] @@E ?>']' JA? F % AC' @ @' F= ' 1AC1@ ' =?E' D= % AB@C' =?E' =IAB@' F@' B= @' A1' F@' I CE% I@= % 4"' 4 < "' 6 !& 6 ' F' J ' A1' JA?@ % ?A ' @] @@E ?>' G@? ' DA ?E % = ' A' F@' Z @'

/12' : 2&&/'1/

F= ' @@J ' J @@ ;' =?E' GFA A@B@C% F=B ?>' I@@?' A?B @E' A1' =? ' F' A11@? @% ! < "' =>= ? ' F ' 4"' 6 ' '*4"& "' ' A1' 5=C =J @? % F= ' =1 @CG=CE ' AJ J ' =? ' A11@? @' ?' F ' @ A?' I@1AC@' J@? A?@E% =?E' F= ' I@' A?B @E' F@C@A1' ?' <@' J=??@C% F= ' I@' AJ J @E' A' F@' AJ JA?' >=A ' AC' FA @' A1' ACC@ A?% F@C@' A' I@' <@D ' A' F=CE' =IA C'1AC' F' @CJ ' ?A ' @] @@E ?>' G@ B@' JA? F ' = ' F@' A?T B ?>' Z @' F= ' F ?<' 1 H 1#3

/(=2 ' =' &2< ' :' '' "2==/== 2 '" 2& =42*/ '' 3/+=4=' ' * +3*/' 42' "/P ' +*4 /=

@ ' - - ' 7 1' =? ' F' I CE% AC' =? ' A1' F@' D J =>@' F@C@A1% AC' =? ' EA>% AC' =? ' F' I@= % AC' F@' < ?' F@C@A1% 4"' 6 ' ' > <' 6 !0 & 6 ' 4"' 6 ' 'E6" ' < " 4* ' F= ' I@' 1A ?E' ?' F@' DA @ A?' AC' A?' F@' DC@J @ ' A1' =? ' D@C A?% =? ' Z @' J = ' C@ AC@' F@' =J@' C@ D@ T B@ ' A' F@' AG?@C' F@C@A1;' =?E' =? ' D@C A?' ?' GFA @' DA @ A?' AC' A?' GFA @' DC@J @ ' F' I CE' AC' F@' D J =>@' F@C@A1% AC' F' I@= ' AC' F@' < ?' F@C@A1% 4"' > <' 6 !& 6 ' 4"' 6 ' 'E6" ' < " 4* ' F= ' I@' A' 1A ?E% N F' D@C A?' <?AG ?>' F= ' F@' I CE% I@= % AC' 6 !& 6 ' F= ' I@@?' A @?% AC' F= ' F@' D J =>@' ' F@' D J =>@' A1' =' A @?' I CE% AC' F= ' F@' < ?' ' F@' < ?' A1' =' A @?' I@= % 4"' <6 ' < ' E6" ' ! ' 6 ' E6" ' 4 *' 6 ' 4 ' 6 !& 6 (3' F= % A?' A?B A?' I@1AC@' =' Z @' A1' F@' D@= @% I@' =I @' 1AC' F@' 1 C ' A11@? @' A' F' 1AC1@ C@% =?E' 1AC' @B@C ' I @b @? ' A11@? @' A' F' D ? FJ @? % = ' =? ' D@C A?' A?B @E' A1' @= ?>' =? ' I@= ' AC' I CE' ' J =E@' =I @' A' I ' F@' = ' DC@ @E ?>' @ A? H1 3

** ') ")/2' =

@ ' - ' 7 & FA A@B@C' F= ' ? =G1 ' =?E' G 1 ' < % GA ?E' C' =<@' =? ' FA @' EAB@' AC' D >@A?' ?E@C' F' C J =? @ ' = ' F= ' ?A ' = J A ? ' A' =C @? ' = ' AJ JA?' =G% F= % A?' A?B A?' I@1AC@' =' Z @' A1' F@' D@= @% 1AC1@ ' =?E' D= % AB@C' =?E' =IAB@' F@' B= @' A1' F@' I CE% =? ' J ' ?A ' @] @@E ?>' GA' DA ?E H N Md

2' J 14 2 '' 2& + '' +44/ ' '"4

DA?' F@' C ' A1' =? ' J E@J @=?AC' J @? A?@E' ?' F ' F=D @C' F@' Z C ' J = % ?E@C' F@' :' , ' 8' 3 @ ' ' % ' % 1' 3' A?B ' F@' DC A?@C' A1' =?' = @JD ' A' AJ J ' F@' =J @% =?E' F@C@ DA?' F@' J = ' I@' D?? F@E' ?' F@' =J @' J =??@C' = ' 1' F@' F=E' I@@?' A?B @E' DA?' =?' ?E J @? ' 1AC' F' = @JD

" B 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' D ' E ! /2') ;' 1' GN' =' H. ' 9/(/' 7+=' +' = ; *+(' 1*+<=/' '' 49/' . I' ' .A' /4' 1' NG' = ' AW.b' 92=/' / ' +14 ; / ' 4=' 7/(/' 12 ' & ' / :' 42' 3 (:=' +' :' 3/+=4=' 2(: ' +(*# 0/ "4 ' ' +' =4+4/' 2& 12 ' & ' / ; / ' 4 49/' " (/=/ ' 4' 1*+<=/' / ; 3(+1/=' 249/(' +' ; +*=' 2(: ' +(*# 0/ "4 &2(' +' # :2 ; /=4 1' "<("2=/ $ +' :' 7 ** ' 1*<: /' 1+4=' 9 =' 1*+<=/' +*=2' /V4/ ' :=49/' &2(; /(' / ' +14P ; / ' 4=' 42' 0 ** ')' 7 49' ' 4/ ' 4' 42' =4/+* " B 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' D ' E ! /2') ;' 1' GN' =' HG' +' :' E ' N /4' 1' ID' =' H' 9/(/' 7+=' +' = ; *+(' 1*+<=/' '' 49/' . I' ' .A' /4' 1' NG' = ' A' W b Wwb' 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' D ' 1' ! /2' I' / ' GN' =' HH' +' :' /V4/ ' :/ :' 42' (/*+' : ' / /' +#*2(' &' /7 ; +' ' N !2V' ' ' H. I ' I' ' ' EN' 49+4' 49 =' 1*+<=/' :2/=' 24' +" "*# 42' 0 ** ')' ") /2' =' <' : /(' +1*+ ; ' 2& ( )94 ' / ' J2*' . ' " ' EEN &/(' 2*' . ' " ' YG

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L' ! ' ' !'

' 1AC J @C' = @ ' DA?' F ' IZ@ ' =C@' C@D@= @E% I ' I ' F@' 4/+* ')' ://(' - :' , ' -8' 3 @ ' ' %4 ' -% 7GFA A@B@C' F= ' ? =G1 ' =?E' G T '' + '' << ' ' 1 ' A C @% F ? % ?=C@% AC' =CC ' =G= % AC' < ' AC' GA ?E% AC' 1*2=/ :' "+(4 2& = @ J D ' A' < ' AC' GA ?E%' =? ' E@@C' <@D ' AC' I @ ?>' ?' F@' ? ? A @E' +' &2(/=4 D=C ' A1' =? ' 1AC@ % F= @% AC' D C @ % F= ! 1AC' @B@C ' F' A11@? @% A?' A?B A?' F@C@A1' I@1AC@' ='Z @' A1' F@' D@= @% 1AC1@ ' =?E' D= ' F' J % ?A ' @] @@E ?>'1 1 ' DA ?E % = ' A' F@' Z @' F= ' @@ J' J @@ ;' N=d' =?E' GFA A@B@C' F=B ?>' I@@?' DC@B A ' A?B @E' A1' =? ' /12' : A11@? @' C@ = ?>' A' E@@C% 1AC' GF F' =' D@ ? =C ' D@?= ' F= ' F=B@' 2&&/ ' 1/ I@@?' J DA @E' I ' F ' AC' I ' =? ' 1AC J @C' ' A1' 5=C = J @? % F= ' =1 @CG=CE ' A J J ' =? ' A1' F@' A11@? @ ' F@C@ ? I@1AC@' @? J @C= @E% GF@ F@C' F' @ A?E' A11@? @' I@' A1' F@' = J @' E@ C D A?' = ' F@' 1 C ' AC' ?A % F= ' I@' > ' 1' 1@ A? % =?E' I @ ?>' A?B @E' F@C@A1' F= ' I@' =I @% = ' F@' E C@ A?' A1' F@' A C % A' I@' J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' @=C % G F' AC' G FA ' F=CE' =IA C% =?E' G F' AC' G FA ' A =C ' A?1 ?@ J @? % =?E% 1' =' J = @' ?E@C' F@' =>@' A1'] @@?' @=C % G F' AC' G FA ' GF DD ?> H 1:3

F@' GACE' 7E@@C%H ?' F@' .' ,' 9' @A' :% ' - % ' - % G= ' F@ E' A' 9' 72(:' I@' =' >@?@C= ' @C J % ? E ?>' = ' < ?E % IA F' @]@ % =?E' = ' =>@ ' 0 : //(' $ ' P DA?' =?' ?E J @? ' 1AC' @= ?>' 7A?@' E@@C%H ' =DD@=C@E' F= ' F@' 1*<: /=' +*# =? J = ' ?' b @ A?' G= ' =' 1=G?% C@ @? ' 1=G?@E% =?E' F= ' F@' +) /=' +' :' 3249 A ?>' A1' E@@C' =C@' <?AG?' I ' F@' ?= J @' A1' 1=G?' ' =' @=C' A E% =?E' =/V/= =C@' ?A ' = @E' E@@C' I@1AC@' F= ' J @' ;' I ' * = @% % F@ E' F= ' F@' @= ?>' F ' =? J = ' G= ' G F ?' F@' = @% = ' F@' @C J ' E@@C' G= ' F@' J A ' >@?@C= ' @C J % =?E' ? E@E' = ' < ?E ' A1' E@@C% = ' =>@ % =?E' I A F' @]@ % N d

& F@C@' =' DC A?@C' G= ' ?E @E' ?E@C' F@' .' ,' 9' @A' :% ' - % L2(;' 2& =< ; P 9' - % 1AC' =' @ A?E' A11@? @% =?E' F@' DC@B A ' A?B A?' G= ' J =E@' ; +(# 12' J 1P I ' GA' Z @ % ' G= ' F@ E' >AAE ' ?E' GF@C@' F' =' A?B A?% 4 2 ' =1 @C' = ?>' F@' B@? @' ?' F@' J =C> ?' ?' F@' = ' G= % @ ' 1AC F' J ' A?' =' @C = ?' E= ' = ' =' @C = ?' D = @' ?' F@' A ? ' A1']1ACE% F1@' DC A?@C' G= ' A?B @E' 1AC' F= ' F@' E E' A?' =' @C = ?' E= ' ? =GT 1 ' @' =?' @?> ?@' 1AC' F@' D CDA @' A1' < ?>' E@@C' ?' F@' 1AC@ ' A1' & FGAAE% I ' A J @E' A' = @' GF@C@' AC' ?' GF= ' A ? ' F@' A11@? @' G= ' A J J @E% I ' DCA @@E@E' A' E C@ ' F@' D@?= ' A' I@

" B' //' /)' &' ')' :' ' ' ' DG. ' 79/49/(' 49/((' 3/' '' (/*+' :' + ' #' "*+1/' ' 42' 49/' &2(;' 2& +' 12 ; ' ; 4 ; / ' 4' '' 49/=/ 79 19' =' '' "2 ' 4' 2& *+7' +' 0&2(/=4' 19+=/ ' K+=/= 2(' "<(* /< $ =' 42' 9+(:' *+32<(' 1 ' =/' W b' 9 =' :*+<=/' =' 4+0/ '' &(2 ;' 49/' G' 1' ' ' ' A. ' J2*' .' "" ' EM' E. /2 ' I ' 1' GN' =' GY' + ' :' 492<)9' 4' =' /V ' W1b' /)' ' ' 4(+ ')' ' ! *2<1/=4/(' < ; ' &/ ' : / :' 42' (/*+ ' : ' 4' 7 *# "(23+3*# 9+J/' ==' .EIH' ' ' ' !' ' 2V' M' ' .M 2" /(+4 2 '' 49/(/ ' +=' 4' ; +# 3/' : 2<34/ : -1

D= E' A' F@' AB@C @@C ' A1' # ' ?' F@' = E' A ? ' 7 GF@C@' F@' = E' A11@? @' G= ' A J J @E'H ' G= ' F@ E' F= ' F ' 11 @? ' F@G@E' F@' A11@? @' A' F=B@' I@@?' A J J @E' ?' F@' A ? ' A1']1ACE' 1#3

' : 14 ; / '4 &2(' '=/12' :' 2&&/ '1/

DA?' =?' ?E J @? ' 1AC' =' @ A?E' A11@? @' =>= ? ' F@' : -' @A' ' . ' I ' < ?>' E@@C' A I Z@ A? ' J >F ' I@' =<@?' A' F@' B= E ' A1' F@' DC@B A ' A?B A?' ?' ?E J @? ' A?' F= ' = @' = @E' F= ' F@' DC A?@C' G= ' A?B @E' I '=' Z @' 1AC' F@' A ? ' A1' @]' 1AC' ? =G1 ' =CC ?>' =G= '=' E@@C'N=?E' F= ' =1 @CG=CE ' F@' 1@ A? A ' =?E' ? =G1 ' E E' A11@?E' =' @ A?E' J @' I ' 1@ AT ? A ' = E ?>' ?' < ?>' =' E@@C ' F@' A?B A?' G= ' J =E@' I '=' J => H= @' A1' @]' = '=' D = @' ?' * EE @ @]' =?E' G= ' =' A?B A?' A1' F@' DC A?@C' =?E' FC@@' A F@C' D@C A? ' F@' A11@? @' G= ' AJT J @E' ?' @] ' ' G= ' A I Z@ @E' ' F= ' F@' ?E J @? ' E E' ?A ' = @' F= ' F@' DC A?@C' G= ' E ' A?B @E,' -?E ' F= ' F@' G= '?A ' E ' A?B @E' = ' F@' A?B A?' G= ' J ' * EE @ @] ; CE ' F= ' F@' A?B A?' G= ' A1' 1A C' GF@C@= ' ' G= ' = @E' ?' F@' ?E J @? ' = ' A1' F@' DC A?@C' A? ' ?E' A?' =' = @' C@ @CB@E' F@' Z E>@ ' F@ E' F= ' F@' DC A?@C' A >F ' ?A ' A' F=B@' I@@?' A?B @E' A1' F@' 1@ A? ' 1 3

4/+* ')' : //(' '' + '#' 'P 1*2=/ :')(2<' :

' F@' - :' ,' -8' 3 @ ' ' ' ' 7 GFA A@B@C' F= ' ? =G1 ' =?E' G 1 ' A C @' F ? ' ?=C@' AC' =CC ' =G= ' AC' < ' AC' GA ?E' AC' = @ J D ' A' < ' AC' GA ?E' =? ' E@@C' <@D ' AC' I@ ?>' ?' F@' ? A @E' D=C ' A1' =? ' 1AC@ ' F= @' AC' D C @ ' AC' ?' =? ' ? A @E' =?E' GF@C@' E@@C' F= ' I@' = ' <@D ' F= ' I@' > ' A1' 1@ A? ' =?E' I@ ?>' A?T B @E' F@C@A1' F= ' I@' =I @' = ' F@' E C@ A?' A1' F@' A C ' A' I@' J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' @=C ' G F' AC' G FA ' F=CE' =IA C' =?E' G F' AC' G FA ' A =C ' A?1 ?@ J @? ' =?E' 1' =' J = @' ?E@C' F@' =>@' A1'] @@?' @=C ' G F' AC' G FA ' GF DD ?> HNMd

9+4' =' +'' '1*2=<(/

?' ? A C@' ?' F@' AC@ ' A1' # @=?' J =E@' ?E@C' =' = @' A1' F= ' -' 1AC' F@' DCA @ A?' A1' J I@C' =?E' CCA ?E@E' I '=' E F' =?E' I=?<' GF F' G@C@' 11 @?' A' DC@B@?' = @' 1CA J' >@ ?>' ? A' ' I ' AB@C' GF F' F@' E@@C' A E' D= ' ?' AC' A ' = ' F@ C' 1C@@' G ' G= ' F@ E' I ' C @' ' A' I@' =?' ? A @E' D=C ' A1' =' 1AC@ ' G F ?' F@' .' ,' 9' @A' :' ' - ' -' ;' =?E' F@' GACE ' 7 GF@C@ ?' E@@C' F= ' I@' = ' <@D HH G@C@' F@ E' A' C@1@C' A' 7 ? A @E' =?E' H A? ' 1'3

<="/14/ :' "/(=2' =' &2<' :' '' "2==/== 2'' 2& (/ ' =2' ' 1 ' + ' :' ' 24' =+4 =P &+142(*# +1P 12<'4 ')' &2(' 4

' ' ' :' A1' F@' ?@G' ' 7 1' =? ' E@@C' AC' F@' F@=E' < ?' AC' A F@C' D=C ' F@C@A1' AC' =? ' '?=C@' AC' @?> ?@' 1AC' F@' =< ?>' A1' E@@C' F= ' I@' 1A ?E' ?' F@' DA @ A?' A1' =? ' D@C A?' AC' A?' F@' DC@J @' A1' =? ' D@C A?' G F' F ' <?AG @E>@' =?E' F' D@C A?' I@ ?>' =<@?' 4"' >& & 4 #' I@1AC@' =' Z @' A1' F@' D@= @' F= ' ?A ' = 1 ' F@' Z @' F= ' F@' = ?@' =G1 ' I ' F' E@@C' AC' F@' F@=E' < ?' AC' A F@C' D=C ' F@C@A1' AC' F=E' =' =G1 ' A = A?' 1AC' F' ?=C@' AC' @?> ?@' =?E' E E' ?A ' <@@D' F@' = J @' 1AC' =F ' ? =G1 ' D CDA @' F@' F= ' A?' A?B A?' I ' F@' Z @' 1AC1@ ' =?E' D= ' =? ' J' ?A' @] @@E ?>' G@? ' DA ?E ;' =?E' 1' =? ' F' D@C A?' F= ' ?A ' ?E@C

/ ' +*4# '' /+=/' 49/#

" B' /VJ' /+*/ ' A' ' ' .HA' +(0' ' ' ' 9/' =/12' :' "2 '4' : /1 : / :' '' 49 =' 1+=/' =' : (/14*#' 12 '4(+(#' 42' 49/' : / ' 1 = 5 '' '' /V' +' 29 '=2 ' ' :' 4(' GY. ' +' :' =// ; =' 42' 9+J/' 3// '' (2 ')*# : /1 : / : ' ' = ' + W1b' /V' 3 ' **/ ' ' <==' ' #i' A.E' 9/' (/"2(4/(=' + : : ' 49/' =/12' :' 236/14 2'' 7+=' "(23+3*#' 12'= : /(/ :' &+4+*' =' 42' 49/' 4* (:' 236/14 2' ' =//' /) ' &' +)/ ' J2 ' .' "' GHY

W wb' 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 4 (/' D ' E' ! /2') :' ' GN' =' GY' 9/(/' 7+=' + = ; *+('1*+<=/' '' 49/' . I' ' .A' /4' 1' NG' =' A' W b' +=' 42' 12<(= ') ' 1 ' : //(' '' +'# "+(0' "+ : : 210' 2(' '1*2=/ :' *+' : ' 79/(/ '' : //(' =9+*#' 3/' <=<+**#' 0/ "4' =' 42' 9+(:' *+32<(' :' =//' :' ' Y.' J2*' . "" ' EM E.)b' /) ' ' 2' /#' !*2<1/=4/(' <;' == ' .EID' ' ' ' !

, I CA >F I =? D@C A?G F ? @? ? =G1 A FAA E@@C G FA J =< ?> =DC@B A E@J =?E ?@ @ =C ; I G= F@ E DA?F= = @ F= =?= =? <@@D@C F=E ?A C >F A @K@ F@D@C A?A1A?@ A =CJ@E ?ACE@C A>@F > ?G FA ?F=B ?> 1C E@J =?E@E F@> ? I 3

3/+4)= /1/==+(# ?=?= ?E J@? =>= ? F@DC A?@C 1AC F=B ?> ? =G1 I@= @?=?E GA ?E@E =?= =? <@@D@C A1 F@ AC@ A1 #@=? =DD@=C@E F= F@DC A?@C I@ ?>1A ?E ?F@1AC@ G F=> ? F@<@@D@C E@J =?E@E F@> ?=?E ?A C@ @ B ?>=C@D A =C@E A?@ A1 F@J 1AC F@D CDA @ A1 =< ?> F@ > ?GF@? F@ AF@C @K@E F@ <@@D@C =?E D @E F J A11 F@ A F@C DC A?@C D @E F J A F@ >CA ?E =?E F@C@ F@ E F J ? F@ A F@C DC A?@C F=E @ =D@E$?A A F@C B A @? @ G= @E ?AC G= F@ <@@D@C A F@CG @ I@= @?F=?I F@ 1AC @ ?@ @ =C A FA E F J A F@ >CA ?E ;=?E * = @ F@E F= F@ .,9 @A :- - G= ?A = 1@E I =J@C@ I= @C ?DA ? A1 =G; A? @JT D = @E =I@= ?> ?F@DAD =C @? @ A1 F@ GACE; =?E F= D ?>=J =?A F@ >CA E =?E F@C@ FA E ?>F J G= ?A =I@= ?>G F ?F@ 7 3

"(/9/ =2 2C 2&/ :/(= <; ;+(#12 /4 2 Y - : ,-8 3 @ = >@?@C= DCAB A? J=E@1AC F@ =DDC@F@? A?=?E E AB@C A1 A11@?E@C D ? F=I @ ?E@C F =?E F@ 8 F=?E 1A AG ?> @ A? C@> = @ F@DCA @@E ?> ?C@ D@ A1= J J =C A?B A?

(1 "+*=+ :+11/==2(/= @ A? 9 BA D 98 DC ? D= ?F@ @ A?E E@>C@@ =?E= @ AC @ I@1AC@ F@1= =C@D ? F=I @ ?F@ =J@J=??C = DC ? D= ?F@ 1C E@>C@@;=?E= @ AC @ =1 @C F@ 1= '@] @D C@ @ B@C d=C@A? A?B A? =I @ A I@ J DC A?@E 1AC=? @CJ ?A @] @@E ?> G'A @=C =?E= I@ AC ?F@ J E@J @=?AC =C@

4/442(= ; =:/ ;/+'2(= +'W4 ; '2(2&&/ '1/= =I @ A I@ ?E @E =?E D ? F@E = DC ? D= A11@?E@C @ =I@ AC ?A11@? @ D ? F=I @ A? J J =C A?B A? =C@ J =E@D ? F=I @ = DC ? D= A11@?E@C NB?d

1 3 /V . ; /# AMM 0+'# 2& 9 =+== =4+'4= 79/49/(9= &<(49/(T</=4 2' '24 :/1 :/: +=' (/=/'1/ 2('24 $ '=/1 .Y =// ;' '4(2P 79/49/(+'' +== =4+'4 0//"/(' '24 +"' :<1/:42 ; //49 =2 '4 ! K"2 '4/:2(/2' (;/:3#49/27'/(2&49/ B /) +*/ G EGY 19+=/' 9+:'+<492(4#42=/a/)<'=<'*/== 9/+:'0//"/(7/(/ "(/=/'4 49/72(:= 49/9/+:'0//"/(7/(/ "(/=/'4 49/72(:= *+':

' ' L L

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' = @ ' 1AC J @C ' @] ?>' DA?' F ' IZ@ ' =C@' C@D@= @E ' ** ')' 1 '
' I ' F@' - :' ,' -8' 3 @ ' ' ' .% 7GFA A@B@C' F= ' ? =G1 ' 9+(/=2(
=?E' G 1 % : 5 <' < ' ?E!"6 !4 '4*' < '*!" '<4>"' 6* "' > ' (+33 4=' '' +
6 #' < ' : 2! ! 2' 4*' < ' 6 '<4>"' : *4 ' > "! ' =<@' AC' < ' =? ' 7+(((/" '' 49/'
F=C@' AC' C=II !' ?' =? ' G=CC@?' AC' >CA ?E' =G1 ' @E' 1AC' F@' ')94 4 ; /
IC@@E ?>' AC' <@@D ?>' A1' F=C@ ' AC' C=II % GF@ F@C' < ' 6& ' : '
? A @E' AC' ?A % F= ' I@' > ' A1'=' J E@ J @=?AC;' 1:3' 6 ;C!' GFA AT 9/'*0/' ''
@B@C' F= ' ? =G1 ' =?E' G 1 % : 5 ' < ' : 2! ! 2' 4*' < ' 49/' :+#4 ; 2
6 '<4>"' : *4" ' > "! '6 #' < ' ?E!"6 !4 '4*' < '*!" '<4>"'6*1 "'
> ' =<@' AC' < ' =? ' F=C@' AC' C=II ' ?' =? ' F' G=CC@?' AC'
>CA ?E% AC' F= ' = ' =? ' J @' @ ' AC' @' F@C@ ?' =? ' ?=C@' AC' @?> ?@'
1AC' F@' =< ?>' A1' F=C@ ' AC' C=II % F= % A?' A?B A?' F@C@A1'
I@1AC@' =' Z @' A1' F@' D@= @% 1AC1@ ' =?E' D= ' F' J' A1' J A?@ %
?A ' @] @@E ?>' 1 B@' DA E % = ' A' F@' Z @' F= ' @@ J' J @@ ;' DCAT V1/"4 2'
B E@E' F= ' ?A F ?>' ?' F ' @ A?' A? = ?@E' F= ' =11@ ' =? ' D@C A?'
=< ?>' AC' < ?>' ?' F@' E= J @' =? ' C=II ' A?' =? ' @=' I=?<' AC'
C B@C' I=?<' ?' F@' A ? ' A1' `! 4 ' 4' 1=C' = ' F@' E@' F= ' @] @?E%
AC' G F ?' A?@' 1 C A?>' A1' F' I=?< H N d
& F' C@ D@ ' A' GF= ' F= ' I@' E@@ J @E' =' 6 ! 2' A1' =' F=C@% , % F6 ! 2' =' F6 ! 2' =
?' =' = @' DA?' F@' 8' @A ' % ' :% ?' GF F' F@' DC A?@C' G= ' A?@ ' ?' =' ! A?@ ' ?' =' !
?E @E' 1AC' @? @C ?>' =' G=CC@?' ?' F@' ? >F J @% =?E' F@C@' 6 ! 2' G C@' F@ E' G C@' F@ E'
=' A?@ ' =>= ? ' F@' G ' A1' F@' A D @C' A1' F@' G=CC@?% ' =DD@=C@E' 11 @?' A' 11 @?' A'
F= ' F@' @ ' G C@ ' ?' F@' BB!=CC@?' = ' = I A ']' AH A <' ?' F@' @B@? ?>% A? @' F@' A? @' F@'
=?E' =' A?@ ' G= ' = >F ' ?' A?@' A1' F@' G C@ ' ;' =?E' F= ' F@' =J @' A11@? @% A11@? @%
=>= ?' I@1AC@']' AH A <' F@' ?@] ' J AC? ?>% GF@?' F@' G= ' @ K@E' I ' 492<)9 F@' 492<)9 F@'
F@' G=CC@?@C' Z ' = ' F@' G= ' = I A ' = ?>' FA E' A1' F@' G C@' ?' GF F' =? J = ' G=' =? J = ' G='
F@' A?@ ' G= ' = >F ;' F@' A?@ ' I@ ?>' F@?' = B@$ =?E% DA?' =' ?A ' < @E% =?E' ?A ' < @E% =?E'
= @' C@ @CB@E% F@' Z E>@ ' FA >F ' F= ' F@' =< ?>' I ' F@' G C@' G= ' F@' D=C ' E E' F@' D=C ' E E'
=' =< ?>' I ' F@' DC A?@C' G F ?' F@' J @=? ?>' A1' F@' = @% =?E' ?A ' =<@' ' ?A ' =<@' '
F= ' F@' F=E' I@@?' DCAD@C ' A?B @E% NEd =G= =G=
@ ' ' A1' - :' ,' -8' 3 @ ' ' % A? = ? ' =' >@?@C= ' DCAB A?' 1AC' ""(/9/ ' = 2 ''
F@' =DDC@F@? A?' =?E' E AB@C ' A1' A11@?E@C ' D ? F=I @' ?E@C' F@' 1 ' 2& 1 ' 2&
% =?E' F@' 8 F' =?E' 1A AG ?>' @ A? ' C@> = @' F@' DCA @@E ?>' 2&&/ ' :/(=
?' C@ D@ ' A1' J J =C ' A?B A?

';W+b' //' 249/(' 2&&/ ' 1/=' +)+ ' =' 49/' ! + ; /' /V4/ ' :' 42' 124*+' :
+7=' J2*' .' "' YG. W1b' 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' D'
W[b' 9 =' 2&&/ ' 1/' =' "<' =9+3*/' * 0/' 1' > ' I ' / ' GN' = ' HM' + ' :' /V4/ ' : / :' 42'
249/(' ; =: / ; /+ ' 2(=' 3#' ; "(=2 ' ; / ' 4 (/*+ ' : ' 9/' 72(:=' '' '+(/' =<3=4 P
2(' & ' / ' 2(3249' //' J2*' . ' "' D' =' 4<4/ :' &2(0 '' 49/' ')94 4 ; /' $+ ' :' 0 '' 49/'
42' 9+(:' *+32<(' =/' =' . . E' J2 ' . ' "' EMK :+ 4 ; /' $ '' 49/' &2(; /(' / ' +14 ; / ' 4' //'
+=' 42' & ' /' +' :' =<(/4 /=' =//' =' . . D' J2 ' . ' J2 ' . ' "' YGA'
"' E . ?' + ' :' +=' 42' + : /(=' + ' :' +3/442(=' =//' W:b' ! *2J/(=' 1+=/' ' +#7#' '
=/1' NE' J2*' . ' "' . EA' 9/' 14' : 21=' '24 +' :' ' ' ' GYN

- 8 : 3. . P . . $ % &

3/442(=

9+4 "*+1/=
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2 'J 14 2 '' 2&
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/ /' '24/' 42' J2*' . ' "' YGA'
Wwb' /V' □ ' !+((+44' Y' HYN " J . 2*' . ' "' YG

1 F@C ' F= ' A?' A?B A?' F@C@A1' I@1AC@' ='Z @' A1' F@' D@= @'
1AC1@ ' =?E' D= ' AB@C' =?E' =IAB@' F@' B= @' A1' F@' 1 F' =<@?' AC'E@T
CA @E' N 1' =? d' F' J' A1' JA?@ ' ?A ' @] @@E ?>' 1 B@' DA ?E ' ='

(2J = 2 '' (/P ='' /14 ')' +')*/(=

A' F@' Z @' F= ' @@ J' J @@ '$ 5CAB E@E' F= ' ?A F ?>' F@C@ ?T
I@1AC@' A? = ?@E' F= ' @] @?E' A' =? ' D@C A?' =?> ?>' : 5 ' <'
: 2! ! 2'4*' < ' 6 ' <4>"' : *4" ' > "! ' 6 #' < ' ?E!"6 !4 '4*'
< *!" ' <4>"'6* "' > 'G' I ' GFA A@B@C' F= ' I '=?> ?>' : 5 '
< ' : 2! ! 2'4*' < ' 6 ' <4>"' : *4!" ' > "! ' 6 #' < ' ?E!"6 !4 '
4*' < '*!" ' <4>"'6* "' > ' ? =G1 ' =?E' G 1 ' =<@' AC'E@ CA '
AC' = @ J D ' A' =<@' AC' E@ CA ' =? '1 F' ?' =? ' F' G= @C' = '1C '
J @? A?@E' F= ' A?' A?B A?' I@1AC@' =' Z @' A1' F@' D@= @'
1AC1@ ' =?E' D= ' =? ' J' ?A ' @] @@E ?>' 1 B@' DA ?E ' =?E' 1' ?
=? ' F' G= @C' = ' = ' J @? A?@E' F@' F= ' A?' F@' <@' A?B A?'
1AC1@ ' =?E' D= ' =? ' J' ?A ' @] @@E ?>' GA' DA ?E ' = ' A' F@

(2J = 2 '' +=' 42' 32<' ' :+(/=' 2&' "+(=9/=

Z @' F= ' @@ J' J @@ ';' =?E' 1' F@' IA ?E=C ' A1' =? ' D=C F' AG?T
F D' AC'B ' F= ' F=DD@?' A' I@' ?' AC' I ' F@' E@' A1' =? ' F' G= @C'
= ' ?' F ' @ A?' I@1AC@' J @? A?@E' ' F= ' I@' 1 @?' A' DCAB@
F= ' F@' A11@? @' G= ' AJ J @E' @ F@C' ?' F@' D=C F' AG? F D' AC'
B ' ?= J @E' ?' F@' ?E J @?' AC' ?1AC J = A?' AC' ?' =? ' D=C F'
AG!? F D' AC' B ' =EZA ? ?>' F@C@ A H 1<3

9/' 4+10*/' 2& '& =9/(=' ; +# 9/' /a/ :

@ ' -8' 7 1' =? ' D@C A?' F= ' = ' =? ' J @' I@' 1A ?E' 1 F?>
=>= ? ' F@' DCAB A? ' A1' F ' ' F@' AG?@C' A1' F@' >CA ?E' G= @C'
HAC' 1 F@C ' GF@C@' F' A11@?E@C' F= ' I@' A' 1A ?E' F ' @CB=? ' AC'
=? ' D@C A?' = FAC @E' I ' F J ' J = ' E@ J =?E' 1CA J' F' A11@?E@C'
=? ' CAE' ?@' FAA<' ?@ ' AC' A F@C' J D @ J @? '1AC' =< ?>' AC' E@ CA T
?>' 1 F' GF F' F= ' F@?' I@' ?' F ' DA @ A?' =?E' ?' = @' F'
A11@?E@C' F= ' ?A ' J J @E = @ ' E@ B@C' D' F@' =J @' J = ' @K@'=?E'

')*/('2 '' =/ a<(/' 2& 9 =' 4+10*/' /V/ ; "'4 &(2 ;' "/ ' +*4#

=<@' F@' =J @' 1CA J' F J' 1AC' F@' @' A1' F' AG J @C' $ 5CAB E@E'
F= ' =? ' D@C A?' =?> ?>' =>= ? ' F@' DCAB A? ' A1' F ' ' : 5 '
<k' : 2! ! 2'4*' < ' 6 ' <4>"' : *4" ' > "! ' 6 #' < ' ?E!"6 !4 '4*'
< '*!" ' <4>"' 6* "' > ' 1CA J' GFA J' =? ' J D @ J @?' @E' I'
=?> @C ' F= ' I@' =<@?' AC' I ' GFA J' F@' =J @' F= ' I@' A' E@ B@C@E'
D' F= ' I ' F@' =< ?>' AC' E@ B@C ?>' F@C@A1' I@' @] @ J D @E' 1CA J' F@
D= J @?' A1' =? ' E= J =>@ ' AC' D@?= ' 1AC' F' =?> ?> H 1!3

4/+* ')'2(:(/:) ')'&2(2#=4/(=' ,, 2#=4 (' & =9P /(/=' 1C3

@ ' - ' 7 & FA A@B@C' F= ' @= ' =? ' A @C ' AC' A @C' ICAAE'
1CA?C' =? ' A @C' I@E' = ?>' AC' 1 F@C ' I@ ?>' F@' DCAD@C ' A1' =?'
A F@C' D@C A?' =?E' 11 @? ' J =C<@E' A ' AC' <?AG?' = ' F' F=' '
I@' > ' A1' 1@ A? ' =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @' A'
I@' D ? F@E' = ' ?' F@' = @' A1' J D @' =C @? ';' 1 3' =?E' GFA A@B@C

W H 9 =' =/14 2 '' =' 4+0/ '' &(2 ;' 49/' D' ' E' ! /2' I' 1' GN' =' HI' +' :' /V4/ ' : /:' 42' (/*+' :' 9/' 72(:=' '' ' +(/' '4(2P :<1/:' '=4/+:' 2& 0 :+# 4 ; /' $ '' 49/' &2(P ; /(' /' +14 ; /' 4' '' 2(:/(' 42' (/ ; 2J/' +' #' :2<3# +=' 42' 79+4' =' 49/' 3/) ' ' ')'+' :' /' :' 2& :+# 4 ; /

"B 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' D' ' E' ! /2' I' 1' GN' =' HA' +' :' /V4/ ' : /:' 42R (/P *+' :[' ' = ; *+(' =<3=4 4<4/' &2(' 0 :+# 4 ; /' $ =' ; +:/' '' 49 =' 1*+<=/' 42' 49+4' '' 49/' "(/P 1/:' ')' 1*+<=/

b' #' GN' ' HM' 1&1' 1' EA' =' . ' 49 =' 14' ; +#' 3/' 1 4/:' +=' 0 9/' #=4/(' +' :' <==/*' L =9/(/=' 14' C1((H' ' G' '' 49 =' 14' 49/' 72(:=' 0 2#=4/(=' $ +' :' 0 ; 4 =' =/*=' $ (/=" /14 J/*#' '1*<:/' 49/' 3(22:' 7+(/' 9+*&7+(/' =" +4' +' :' ="+7 '' 2& 26 =4/(=' +' :' ; <==/*=' (/=" /14 J/*#' #

=' . Y' +*#' 2#=4/(=' 2(' ; <==/*=' 3/' ')' "2(2 '' +' ' 2#=4/(' 2(' ; <==/*' 3/:' 7 49 '' 49/ * ; 4=' 2&' +' #' =<19' =/J/(+*#' &=9/(#=9+*'3/ 49/' +3=2*<4/' "(2"/(4#' 2& 49/')(+'4//=' +' :' '' +*#' 12<(4=' 2&' *+7' +' :' /T<4#' +' :/ /*=/79/(/' +' :' &2(' +*#' "<("2=/=' 1J*' 1(; '+*' 2(' 249/(' =9+*#' 3/' :// ; /:' 42 9/ '' 49/' +14<+*#' "2==/== 2 '' 2& 49/')(+'4//=' #' ' GM' 49/' "2(4 2 '' 2& 49/' =/+' =92(/' 42 79 19' +' ' 2(:/(' 2& 49/' 2+(:' 2& (+:/ <' :/(' 49 =' 14' (/*+4/=' W+=' &+(' +=' 4' =' '2(3#' *+7' 7 49 '' 49/' 32:# 2& ' +' # 12<'4#H =9+ ' &2(' +*#' "<("2=/=' "& " ; =: 14 2 '' 3/ :// ; /:' 42' 3/[7 49 '' 49/' 32:# 2& 49/' +:P 62 ' ')' 12<' 4#' 2(' 42' 3/' 7 49 '' 49/' 32:# 2& /+19' 2& 49/' +:62 ' ')' 12<' 4 /=' & ;2(/ 49+ '' 2' /

W 4H //' .' ' GEI' &2(' 49/' "<' =9P ; /' 4

F= ' J =G1 ' =?E' G 1 ' @' =? ' EC@E>@% AC' =? ' ?@ % ? C T
J @? % AC' @?> ?@' GF= A@B@C% G F ?' F@' J ' A1' =? ' A @C' < #'
6 ' ! 2 ' AC' 1 F@C % : ! 2' ! ' E"4E " '' 4*' 6 ' ' 4 < "' E " 4 ' 6 #'
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A @C ' AC' A @C' ICAAE% = FA >F' ?A?@' F= ' I@' = = ' =<@?% AC'
F= ' ? =G1 ' =?E' G 1 % G F' =? ' ?@ % ? C J @? % AC'
@?> ?@% EC=>' DA?' F@' >CA ?E' AC' A ' A1' =? ' F' 1 F@C % F= ' I@'
> ' A1' =' J E@ J @=?AC% =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@'
=I @% = ' F@' E C@ A?' A1' F@' A C % A' I@' J DC A?@E' 1AC' =? '
@C J ' ?A ' @] @@E ?>' FC@@' J A? F % G F' AC' G FA ' F=CE' =IA C%
=?E' G F' AC' G FA ' A =C ' A?1 ?@ J @? ;' =?E' ' F= ' I@' 11 T
@? ' ?' =? ' ?E J @? ' A' E@ C I@' @ F@C' I ' ?= J @' AC' A F@CG @'
F@' I@E% = ?>% AC' 1 F@C ' ?' GF F' =? ' A1' F@' = E' A 1@? @ ' F= '
F=B@' I@@?' A J J @E% G FA ' = ?>' F@' = J @' A' I@' ?' =? ' D=CT
=C' D=C F% AG? F D% AC' B ;' 5CAB E@E' F= ' ?A F ?>' ?' F '
@ A?' A? = ?@E' F= ' DC@B@?' =? ' D@C A?' 1CA J ' = F ?>' AC'
1 F ?>' 1AC' =? ' 1 A= ?>' 1 F' G F ?' F@' J ' A1' =? ' A @C' 1 F@C '
G F' =? ' ?@ % ? C J @? % AC' @?> ?@' =E=D @E' 1AC' =< ?>' 1 A= ?>' 1 F'
A? H NVd $ '
@ ' ' A? = ? ' =' >@?@C= ' DCAB A?' 1AC' F@' =DDC@F@? A?' A1'
A11@?E@C ' D ? F=I @' ?E@C' F@' % @] @D ' A? ' = ' A' F@' A11@? @'
A1' =?> ?>' ?' F@' E= J @' ;' =?E' F@' 8 F' =?E' 1A AG ?>' @ A? '
C@> = @' F@' DCA @@E ?> ' ?' C@ D@ ' A1' J J =C ' A?B A?
@ ' 9' NJd J =<@ ' DC ? D= ' ?' F@' @ A?E' E@>C@@' =?E' = @ T
AC @ ' I@1AC@' F@' 1= ' D ? F=I @' ?' F@' =J @' J =??@C' = ' DC ? D= '
?' F@' 1 C ' E@>C@@;' =?E' = @ AC @ ' =1 @C' F@' 1= ' N@] @D ' C@ @ B@C d'
=C@' =I @' A' I@' J DC A?@E' 1AC' =? ' @CC=' ?A ' @] @@E ?>' GA' @=C ';'
=?E' =I@ AC ' ?' J E@ J @=?AC ' =C@' =I @' A' I@' ?E @E' =?E'
D ? F@E' = ' DC ? D=' A11@?E@C ' ' @ ' % =I@ AC ' ?' A11@? @ '
D ? F=I @' A?' J J =C ' A?B A?' =C@' J =E@' D ? F=I @' = 'DC ? D=' '
A11@?E@C % 1 3'
& F@C@' =?' ?E ? @?' F=C>@E' F@' DC A?@C' G F' ? =G1 ' ': 14 ; / '4
@? @C ?>' =' >=CE@?' =EZA ? ?> =' EG@ ?> FA @% =?E' G F' =' @C = ?'
?@ ' @= ?>' A ' A1' =' DA?E' ?' F@' = E' >=CE@?' =' @C = ?' b =? ' A1'
B@' >A E' =?E' B@C' 1 F' A1' F@' >AAE ' =?E' F= @ ' A1' ' ;' F@'
Z E>@ ' F@ E' F@' ?E J @? ' >AAE% F@' = @' I@ ?>' ICA >F ' G F ?'
F@' 8' @A ' % ' :% G FA ' F@' = @>= A?' F= ' F@' 1 F' G@C@' F@'
'AAE ' =?E' F= @ ' A1' =? ' D@C A?% =?E' F@C@1AC@' F= ' D=C ' A1' F@'
?E J @? ' G= ' CD =>@% 143
B ' ?E J @? ' A?' F@' = J @' = @' G= ' >AAE% = FA >F' ' E E' ?A '
= @' F@' J @=? ' I ' GF F' F@' 1 F' G@C@' =<@?' AC' A @?% =?E' = FA >F'
= @>@E' F@ J ' A' F=B@' I@@?' 1@ A? A ' A @?% " B
DA?' =' = @' C@ @CB@E' DA?' =?' ?E J @? ' 1AC' @= ?>' A @C ' ?'
=' E= 'C B@C% A <I C?% ' % ?' E@ B@C ?>' F@' Z E> J @? ' A1' F@' A C

" B' 9 =' 1*+<=/' =' 4+O/ '' &(2 ;' 49/' D ' E
! /2').' 1' GN' =' HY' 9/(/' 7 /(/' = ; *+(' W 4b' /' J2*' .' " ' EM' +=' 42' 9+(:' *+32<('
1*+<=/=' '' 49/' A' ' Y' /4' 1' .MY' ==' .. +' :' =2* 4+(# 12 ' & ' / ; / '4
.G' W b' ? E' ' N' /4' 1' .ME' =' .E' W b? " B <' :=2 ' S=1+=/ ' G' +=4' ' ' 1' .Y'
+' :' .H' ' . I' /4' 1' EE' =' IG' W.b' 9/' =' IH' " ' Y. .
72(:=' '' ' 7/(/' '4(2:<1/ :' 42' (/P W"b' /V . +((+: 1/' ' ' GMA'
; 2J/' +' :2<3% +=' 42' 79/49/(' 02#=4/(' 9/' 6<:) /=' 9/*:' 49 /' 12 ' J 14 2 '' 7(2 ') ' 2 ''
& =9/(# $ 7+=' 12 /V4/ ' = J/' 7 49' 49/' 72(:=' 49/')(2<' :' 49+% 49/' & =9' 7/(/' ' 2% 03(/ :'
'' 49/' 3/) ' ' ')' 2& 49/' 1*+<=/ ' =' 42' 0/ /"' 2(' "(/=/(J/ :'$ '' 49/' (J/(' +=' 49/'
9+(:' *+32<(' 1 ' =/' J2*' .' "" ' EM' E.' ? (J/(' (+' '' 4=' ' +4<(+' 12<(=/' + ; 49/(2'
. ' "' A. 7+=' '249 ')' 42' O/ /"' 2(' "(/=/(J/' 49/' & =9'
" B' 2*' .' "' .EA 7 49 '' 49/' "+(0
*'

= E%' 7 F ' = @' '1C@@' 1CA J ' =? ' EA I ' F@' DC A?@C' G=' = >F' @= ?>' A @C ' 1CA J ' =?' A @C' I@E%' I ' F ' AG?' = <?AG @E> J@?' ' F@' C = ' F@' DCA @ AC' DCAB@E' I ' AC=' @B E@? @' F= ' 1CA J ' F@ @=C' 9 8' A' F@' DC@ @?' J @' F@' =?E' F ' 1= F@C' F=E' I@@?' ? F@ DA @ A?' =?E' @?ZA J @?' A1' F@' A @C' I@E%' =?E' F=E' = @C @E' =? @] B@' C >F ' F@C@ A' ; F= ' F@ C' @] B@' C >F ' A' F ' A @C I@E' G= ' F= @?>@E%' =?E' F= ' ?' 9: ' =?' = A?' G= ' ICA >F ' A C ' F@' C >F %' =?E' =' B@CE ' > B@?' ?' 1=BA C' ,1 F@' DCA @ AC%' =?E F= ' ? @' F@?%' EAG?' A' F ' J @%' F@' DCA @ ACH ' C >F ' F=E' ?A' I@@?' F= @?>@E ' ' G= ' = E' F= ' F ' @B E@? @' G= ' ?A ' 11 @?% =?E' F= ' F@' DCA @ ACH ' C >F ' A >F ' A' F=B@' I@@?' DCAB@E' I ' E@@E' ' ' b @' C @' F= ' F ' A @C' I@E' G= ' ?' =' ?=B >=I @' C B@C% GF@C@' F@' D I ' F=E' E"!& #'*6 ! ' =' C >F ' A' 1 F;' I ' ' ' @b = ' C @' F= ' I ' =? @?' >C=? ' AC' DC@ C D A?' =' DC B= @' D@C A?' J= ' F=B@ =?' @] B@' C >F ' A' =' @D=C= @' 1 F@C ' F@C@ ?' F@?' F@' A? ' b @ ! A?' %' =?' F' =?' @] B@' C >F ' I@' DCAB@E' I ' D=CA ' ' ' @=' F= ' DC@ C D B@' C >F ' J = ' I@' DCAB@E' I ' D=CA ' @B E@? @' ?E@@E% GF= ' I@ @C' DCAA1' =?' F@C@' I@' =>= ? ' =' GCA?>EA@C' F=?' F=' A1 =?' ? ? @CC D @E' @C' AC' @?ZA J @?' A1' F@' C >F ' 1AC' 1AC ' AC' 11 ' @=C ' ' ?E' ?' F' =' = @' =' Z C ' GHA E' I@' A E' F= ' =' = J=?% 1CA J ' F' A?>' A? ? @E' ? ? @CC D @E' @?ZA J @?' A1' F@' C >F' = J @E%' GA E' F=B@' F@' C >F ' ?' F@' DC@ @?' = @' F@' @B E@? @ G= ' =I ?E=? ' 1 @?' A' @ =I F' F@' C >F H 7 3

2' 14 2 " 2& +'" +44/ ; "4

DA?' F@' C = ' A1' =? ' ?E =I @' A11@? @' J @? A?@E' ?' F ' F=D @C% F@' Z C ' J = %' ?E@C' F@' :' ,' 8' 3 @ ' ' Md%' ' %' NCd' A?B ' F@ DC A?@C' A1' =?' = @ J D ' A' A J J ' F@' = J @%' =?E' F@C@ DA?' F@' J=' I@' D ? F@E' ?' F@' = J @' J =??@C' = ' 1' F@' F=E' I@@?' A?B @E' DA? =?' ?E J @?' 1AC' F' = @ J D

W^%' /)' . ' 27 ' ')' . .' 2V' ' ' ' AEM W^;% 2 ' . ' "' YG

L' !' ' ' ' ' ' ' ' ' P
! ' ' ' ' ' ' ' ' ' ' L' P
!' '

' A' =C @? ' ?' F D %' GF=CB@ %' , ' F ' F@' - :' ,' -8' 3 @ ' ' %' 4/+* ') F D %
' %' 7GFA A@B@C' F= ' @=' =? ' >AAE ' AC' J @C F=?E @' ?' =? ' GF=CB@ %' ,
B@ @ %' I=C>@%' AC' IA= ' A1' =? ' E@ C D A?' GF= A@B@C' ! ' 6 ' '<6 '
AC' ?' =? ' DAC ' A1' @? C ' AC' E F=C>@%' AC' DA?' =? ' ?=B >=I @' C B@C'
AC' =?= %' AC' ?' =? ' C@@<' AC' I= ?' I@ A?> ?>' A' AC' AJ J ? = ?>'
G F' =? ' F' <6 ' DAC %' C B@C%' AC' =?= %' AC' F= ' @=' =? '
>AAE ' AC' J @C F=?E @' 1CAJ' =? ' EA <%' GF=C1%' AC' b = ' =EZ= @? ' A'
=? ' F' <6 ' DAC %' C B@C%' =?= %' C@@<%' AC' I= ?%' F= ' I@' >
A1' 1@ A? %' =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @%' = ' F@'
E C@ A?' A1' F@' A C %' A' I@' <@D ' ?' D@?= ' @CB E@' 1AC' =? ' @CJ '
?A ' @] @@E ?>' 1A C @@?' =C ' =?E' ?A ' @ ' F=?' FC@@' @=C %' N=d' ` AC'
' A' I@' J DC A?@E' 1AC' =? ' @CJ ' ?A ' @] @@E ?>' GA' @=C %' G F' AC'
G FA ' F=CE' =IA C%' =?E' G F' AC' G FA ' A =C ' A?1 ?@T
J @? H N d

@ ' : ' 7 & FA A@B@C' F= ' D ?E@C' AC' @=' =? ' D=C ' A1' =? ' 4/ +* ')' &(2 ;'
F D' AC' B@ @ ' GF F' F= ' I@' ?' E C@ %' AC' GC@ <@E%' C=?E@E%' AC' =9 '" ' ' : = '
= ' A?' FAC@%' AC' =? ' >AAE %' J @C F=?E @%' AC' =C @ ' A1' =? ' < ?E' 4(/=' 2(7(/10/ :
I@ A?> ?>' A' F' F D' AC' B@ @ %' F= ' I@' > ' A1' 1@ A? %' =?E'
I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @%' = ' F@' E C@ A?' A1' F@'
A C %' A' I@' <@D ' ?' D@?= ' @CB E@' 1AC' =? ' @CJ ' ?A ' @] @@E ?>'
1A ! @@?' @=C ' =?E' ?A ' @ ' F=?' FC@@' 163' @=C % ` AC' A' I@' J DC T
A?@E' 1AC' =? ' @CJ ' ?A ' @] @@E ?>' GA' @=C %' G F' AC' G FA ' F=CE'
=IA C%' =?E' G F' AC' G FA ' A =C ' A?1 ?@J @? ' =?E' F@' A11@?E@C'
J = ' I@' ?E @E' =?E' C @E' @ F@C' ?' F@' A ? ' AC' D = @' ?' GF F'
F@' A11@? @' F= ' F=B@' I@@?' AJ J @E' AC' ?' =? ' A ? Z '' AC' D = @'
?@] ' =EZA ? ?> H 1 3

@ ' 8 ' 7 1' =? ' >AAE %' J @C F=?E @%' AC' =C @ ' A1' =? ' < ?E%' /(=2 '=' '' 4
I@ A?> ?>' A' =? ' F D' AC' B@ @ ' ?' E C@ %' AC' GC@ <@E%' C=?E@E%' "2==/== 2 '' 2&
AC' = ' A?' FAC@%' F= ' I@' 1A ?E' ?' F@' DA @ A?' A1' =? ' D@C A?%' =9 " 7(/10/ :'
AC' A?' F@' DC@J @ ' A1' =? ' D@C A?' G F' F ' <?AG @E>@%' =?E' F')22 :=' ' 24
D@C A?%' I@ ?>' =<@?' 4"' >& & 4 #' I@1AC@' =' Z @' A1' F@' D@= @%') J ')' +' =+4 =P
F= ' ?A ' = 1 ' F@' Z @' F= ' F@' =J @' =G1 ' I ' F@' =J @%' &+142(# +1P
F@?' F@' =J @' F= %' I ' ACE@C' A1' F@' Z @%' I@' 1AC FG F' E@ B@C@E 12<' '4

" B' 2' */=' 49+ '' & J' #/+(=' &' 49/' W1D 9/' & (=4' "+(4' 2&' 49 =' 1*+<=/' =' 4+0/ '' 2&&/ ' 1/' 3/' 12 ; ; 44/ :' +&4/(' 49/' GA49' <*#' &(2 ;' 49/' D' ** ' I' ' :' /4 ' 1' ED' =' .EY I ' =/' J2*' . ' "' DH E' ? 49/' *+=4' "+(4' &(2 ;' 49/' *+=4' "+(4' 2&
" B' 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' D' ' E' 49/' D' 'E' ! /2' I' 1' GN' =' .E' +' :' 49/' N' ! /2' I' 1' GN' =' .D' +' :' 49/' N' ! /2' I' 1' AA' =' .E' W b' =' 42' 9+(:' *+32<(' 1 ' =/' J2*' . ' "' "' EM' E.' ? &S.' "' A.
1 ' AA' =' .D' W b' 7 49' 49/' + : : 4 2 '' '' ' =' 42' 9+(:' *+32<(' 1 ' =/' (2*' . ' "' "' EM' E.' ? : "' A.

AB@C A AC 1AC F@ @ A1 F@ C >F 1 AG?@C F@C@A1;=?E F@ A11@?E@C F= A?B A?B A?A1 F A11@? @ I@1AC@ F@ Z @= F@ E C@ A?A1 F@ Z @ F@C I@ A J J @E A F@ A J JA? >=A AC FA @ A1 ACC@ A?F@C@ A F@ J DC A?@E A? AC A I@ J DC A?@E =?E <@D A F=CE =IA C 1AC =? @C J ?A @] @@E ?>]! J A? F AC @ @ F= 1AC1@ =?E D= AB@C =?E =IAB@ F@ B= @A1 F@ >AAE J @C F=?E @ AC =C @ F J A1 JA?@ ?A @] @@E ?> G@? DA ?E = R A F@C Z @ F= @@J J @@ H 1#3

&+'# "/4=2'' 2&&/(=9 "P 7(/10/:)22:= &2(=+*/'49/)22:= ; +# 3/ =/ a/:' 1

@ 7 1'=? D@C A? F= A11@C AC@]DA @1AC = @=? >AAE J @C F=?E @ AC =C @ GF= A@B@C GF F F=B@ I@@?= ? =GT 1 =<@?' AC F= I@ C@= A?=I D@ @E A A F=B@ I@@?= =<@?' 1CA J=? F D AC B@ @ ?= E C@ AC GC@ <@E C=?E@E AC = A? FAC@ ?= @B@C F @=?D@C D?A GFA J F@ =J@ F= I@ A11@C@E 1AC = @ AC=? A11 @C A1 F@ A J AC@] @ AC D@= @A11 @C J = =G1 @ K@ F@ =J@ =?E F= G F = A?T B@? @? D@@E =CC F@ =J@ AC > B@ ?A @ A1 F @ K C@ A AJ@ Z @A1 F@ D@= @;=?E 1 F@ D@C A?GFA F= F=B@ A11@C@E AC @]DA @E F@ =J@ 1AC = @ I@ ?> J J A?@E I F Z @ F= F@ =J@ =G1 I F >AAE J @C F=?E @ AC =C @ F@?' F@ =J u F= I ACE@C A1 F@Z @ I@ 1AC FG F # ! " #4 "' 4 4"'*4"' F@ @A1 F@ C >F 1 AG?@C I@ A1 DA?D= J@? A1 =C@= A?T =I @1@G=CE N A I@ = @C = ?@E I F@ Z @d A F@ D@C A?GFA @ K@E F@ =CD@;=?E F@ A11@?E@C F='A? A?B A?A1 F A11@? @ I F@ Z @ = F@ E C@ A?A1 F@ Z @ @ F@C I@ A J J @E A F@ A J JA? >=A AC FA @A1 ACC@ A?F@C@ A I@ J DC A?@E A? AC A I@ J DC A?@E =?E <@D A F=CE =IA C 1AC =? @C J ?A @] @@E ?>]J A? F AC @ @ F= 1AC1@ =?E D= AB@C =?E =IAB@ F@ B= @A1 F@ >AAE J @C F=?E @ AC =C @ F J A1 J A?@ ?A @] @@E ?> G@? DA ?E = A F@ Z @ F= @@J J @@ H N@d !

""(/9/'=2'' 2& 2&&/':/(=' ';;+(# 12'J 14 2'=

@ A? = ? '=' >@?@C='DCAB A?1AC F@ =DDC@F@? A?=?E E AB@C A1 A11@?E@C D ? F=I @ ?E@C F@ ;=?E F@ 8 F =?E 1A AG ?>@ A? C@> = @ F@DCA @@E ?> ?C@ D@ A1 JT J =C A?B @?

('1 "+*=+':' +11/=2(/= @ 9 NWd ?@= @ A1 1@ A? DC ? D= ? ?F@ @ A?E E@>C@@ =?E= @ AC@ I@1AC@ F@1= =C@D ? F=I @ ?F@ =J@ J=??@C = DC ? D= ?F@ 1 C E@>C@@;=?E= @ AC@ =1 @C F@1= N@] @D C@ @ B@C d =C@ A? A?B A? =I @ A I@ J DC A?@E 1AC =? @C J ?A @] @@E ?> GA @=C ;=?E=I@ AC ?J E@J @=?AC =C@ =I @ A I@ ?E @E=?E D ? F@E= DC ? D= A11@?E@C @ N>d

3/442(= ';=:/;/+'2(= +':'; '2(2&&/'1/= @ =I@ AC ?A11@? @ D ? F=I @ A? J J=C A?B A?=C@ J=E@D ? F=I @ = DC ? D= A11@?E@C N>d

=42 49/ ;/+' ')2 2&)22:= 1 ?=E = @ DA?F@ Y 4 -= :8 F@GACE />AAE G=C@ =?E J @C F=?E @ G@C@ A? E@C@E = C@ C= ?@E A F >AAE , = G@C@ = AE>@E ?B@ @ AC A?GF=C1 AC b = 1<3 04 F= GF@C@ F@DC A?@C G= ?E @E DA?F= = @1AC @= ?>

" 9 =1*+<=/ =4+0/''&(2;49/D E !/2 I 1 GN =' .N 9/(/ 7+= +=; *+(1*+<=/ '' 49/ .I .A /4 1 NG =' I Wb

" 9 =1*+<=/ =4+0/''&(2;49/D E !/2 I 1 GN =' GM 9/(/ 7+= +=; *+(1*+<=/ '' 49/ .I .A /4 / NG =' I

Nd Wwb 2* .' "' .EA R3B =42 2&4/'1/= 12;; 44/:' 2'' 49/ =/+' =//' =/1' ..A J2*' .' "' .I 9/ 14 :2/= '24/V4/'':42 124*+':

W D G +=4' ' 1' .Y =' EA' "' YID

K ' d 8 ' 3 : ' '

=' A? E@C=I @' J'A1' JA?@ 'A ' A1' =' F D' ?'DAC%' F@' = @'G= '
FA E@?'?A ' A' I@'G F ?'F@' = @%' FA >F'>C@= 'D=C 'A1' F@' JA?@ '
A? @E' A1' 5AC >= ' JA?@ ' ?A ' J=E@' CC@?' I 'DCA =J= A?%'
F ' AJ JA? ' CC@? %' N d

F@' >>=>@' A1' =' D= @?>@C' >A ?>' I ' =' @=J@C' G= ' G F ?' <))+)/' 2&
F@' GACE ' 1>AAE ' AC' J@C F=?E @'H ?' F@' .' ,C 9' @A ' :%' - %'
. N d' ! M
& @' F=B@' @@?' F= HGF@C@' 'F@' J = @C' =?E' AG?@C' A1' =' F D' AA<'
AJ@' A1' F@' >AAE ' E@ B@C@E' A' F J' A' =CC %' 'G= ' F@ E' ?A ' A' I@'
=C @? %' = ' F@' E E' ?A ' =<@' F@' >AAE ' A ' A1' F@ C'D= <=>@';' 1 3' =?E'
' G= ' = A' F@ E' F= ' @B@?' 1' ?E@C' F@' C J =? @ ' ' F=E'
=J A ? @E' A' =C @? %' 'GA E' ?A ' F=B@' I@@?' =?' A11@? @' G F ?' F@'
-:' @A' -%' ' :8' 1 3
& F@C@' F@' DC A?@C' G= ' ?E @E' 1AC' @= ?>' =' b =? ' A1'
E@= '7 ?' =' @C = ?' I=C>@' A?' F@' ?=B >=I @' C B@C' F=J@ %' =?E' '
=DD@=C@E' F= ' F@' I=C>@' F=E' I@@?' ICA >F ' ? A' J@FAb @' EA <%'
=?E' F@C@' JAAC@E;' =?E' I ' F@' @11]'A1' F@' E@' 'G= ' @1 '=>CA ?E%'
=?E' ?' F@' ? >F ' F@' E@= ' G@C@' 4 'G ! ' G= ' F@ E' F= ' Fu'
A11@? @' = E' G= '?A 'DCAB@E' G F ?' F@' J@=? ?>' A1' F@' -:' @A' -%'
' :8%' = ' F@'@B E@? @' DCAB@E' F= ' F@'A11@? @'G= '?A ' AJ J @E'A?'
F@' ?=B >=I @' C B@C' F=J@ %' I ' DA?' F@' I=?< ' A1' A?@' A1' '
C@@< %' 1&3
F@' * @C F=?' F DD ?>' %' .' ,' 9' 3 @ ' ' :%' ' :.9%' J T <; ;+(#
DA @ ' D@ ? =C ' D@?= @ ' A?' @B@C ' D@C A?' GFA' N d 7GCA?>1 ' 2&&/'1/-' '4+e'
=CC @ ' =G= ' AC' C@J AB@ %' =? ' D=C ' A1' =? ' F D' AC' IA= ' C=?E@E' AC' /(19+'4
?' E=?>@C' A1' I@ ?>' C=?E@E%' AC' A F@CG @' ?' E C@ %' A?' AC' ?@=C' F@' 9 "" ')' 14
FAC@' A1' =? ' @=' AC' E= ' G= @C%' AC' =? ' D=C ' A1' F@' =C>A' AC'
=DD=C@ ' F@C@A1%' AC' =? ' GC@ <%' AC' N-d' @?E@=BA C ' ?' =? ' G= ' A'
J D@E@' AC' F ?E@C' F@' =B ?>' A1' F' F D%' IA= %' =C>A%' =DD=C@ %' AC'
GC@ <%' AC' N9d' @ C@ @ ' =? ' GC@ <%' AC' AI @C= @ %' AC' E@1= @ ' =? '
J=C< ' F@C@A? H
@ ' :. ' 7 1'=? ' D@C A?' =<@ ' ? A' =? ' 1AC@ >?' DAC ' AC' D = @%' +0 ')' 7(/10'
=? ' F D' AC' IA= ' C=?E@E%' AC' A F@CG @' ?' E C@ 'A?' AC' '42' +'&2(/)'' 4 2(4
?@=C' F@' FAC@' A1' F@' @=' AC' A1' =? ' E= ' G= @C% = @' G F ?' F@'
J 'A1' F@' ? @E' 6 ?>EA J%' AC' =? 'D=C 'A1' F@' =C>A' AC' =DD=C@ '
F@C@A1%' AC' =? F ?>' I@ A?> ?>' F@C@ A%' AC' =? ' GC@ <' 1A ?E' G F ?'
F' J ' = ' =1AC@ = E%' =?E' F@C@' @ ' F@' =J@%'F@' F= 'I@'> '
A1'1@ A? %' =?E' I@' IZ@ ' A' D@?= ' @CB E@' 1AC' =' @C J ' ?A ' @] @@ET
?>' 1A C' " B @=C %' " B
DA?' =?' ?E J@?' 1AC' =? ' A11@? @' J@? A?@E' ?' F ' F=D @C ' 2'J 14 2'' 2&
F@'Z C ' J= %' ?E@C' F@' :' ,' 8' 3 @ ' ' %' ' %' 1E3' A?B ' F@' =?= @JD%'
DC A?@C' A1'=?' = @ J D ' A' A J J ' F@X' = J @%' =?E' F@C@ DA?' F@' J = '
I@'D ? F@E' ?' F@' = J @' J =??@C' = ' 1' F@' F=E' I@@?' A?B @E' DA?'
=?' ?E J@?'1AC' F' = @ J D

" B ! (; /=S' 1+=/' L2=4' DN' '' 49/' 2&&/'1/' 7+=-' 12 ; ; 44/:' +&4/(' 49/' GA49'
'24/' ' ' '' /)9S' /+=/' .' /+19' <*#' .EYI' =//' 2*' .' "' DH
YG W2d' # =/1' AGM' 0&2(' 49/' "<("2=/' 2&
K "*B' /V' ' ( )94' D' ' ' .AN') J ')'6<(=: 14 2 '' <' :/(' 49 =' 14' /J/(#
+(O' ' ' +' :' *:/(=2 ' 2&&/'1/' =9+**' 3/' :// ; /:' 42' 9+J/' 3// ''
W B <4'=//' '27' GI' 'GA' /4' 1' NY' 12 ; ; 44/:' +' :' /J/(#' 1+<=/' &12 ; "*+ '4
=' H' 4&1' "' .HA' 79 19' 72<*:' +""*#' 42' 42' 9+J/' +(=/' ' / 49/(' '' 49/' "*+1/' ''
=<19' +' 1+=/ 79 19' 49/' =+ ; /' +14<+**#' 7+=' 12 ; ; 44/:' 2(' +(2=/' 2(' '' +'#' "*+1/' '' 79 19' 49/'
"C B /V ' +:2V' ' ' 'NG 2&&/':/(' 2(' "/(=2 '' 12 ; "*+ '/:' +)+ '=4'
; " B 0/S' 1+=/' G' +=4' ' ' 1' .Y' ; +#3/ S
=' EA' "' YID " B J .' J2*' ' "' YG
WXd' 24' */=-' 49+'' &J/' #/+(=' &' 49/

2 "' ' ' ' ' ' ' ' ' '
' L' ! ' ' ' ' ' ' ' ! '

+(1/ '# 3#
1*/ (0=' 2(
=/ (J+ '4=

7' F@' - :' ,' -8' 3 @ ' ' ' .' 7GFA A@B@C' I@ ?>' =' @C<' AC'
@CB=? ' ' 3' 5 ' ' ' 5' ' '
:' ' & .' F= ' > @=' '=? ' F= @ ' JA?@ ' AC' B= =I @' @ T
C ' I@ A?> ?>' A' AC' ?' F@' DA @ A?' AC' DAG@C' A1' F ' J = @C' AC'
@ ?D A @C' F= ' I@' > ' A1' 1@ A? ' =?E' I@ ?>' A?B @E' F@C@A1'
F= ' I@' =I @' = ' F@' E C@ A?' A1' F@' A C ' A' I@' : ' ' D@?= '
@CB E@' 1AC' =? ' @C J ' ?A ' @] @@E ?>' 1A C @@?' @=C ' =?E' ?A ' @ '
F=?' FC@@' " B @=C ` AC' A' I@' JDC A?@E' 1AC' =? ' @C J ' ?A ' @] @@ET
?>' GA' @=C ' G F' AC' G FA ' F=CE' =IA C' =?E' G F' AC' G FA '
A =C ' ?1 ?@ J@? ' =?E' 1' =' J = @' ?E@C' F@' =>@' A1'] @@?' @=C '
G F' AC' G FA ' GF DD ?> H 1:3' '

&&/ '1/=' +4'
12 ; ; 2 '' *+7

AJ@' = @ ' DA?' F ' IZ@ ' G@C@' C@D@= @E' I ' F@' .' ,' 9'
@A ' :' ' - .' F=B ?>' I@@?' 1AC' =' A?>' J @' I ' @' C@ AC @E' A' = '
F@' AJ JA?' =G' =DD @ ' A' F@' 1C= E @?' A?B@C A?' I ' =' @CB=? '
A' F ' AG?' @' A1' F@' >AAE ' A1' F ' J = @C ' F@' D ? F J @? ' 1AC' ='
1@ A? A ' @= ?>' I ' =' @CB=? ' 1CA J' F ' J = @C' ' J =E@' JAC@'
@B@C@' F=?' ?' =?' ACE ?=C ' = @' A1' =C @? ' I ' F@' - :' ,' -8' 3 @ '
' ' .

F@' @=C' J =] J' A1' F@' AJ JA?' =G' @ =I F@E' I ' =' B=C @ '
A1' = @ ' F= ' GF@C@' =' D=C ' F= ' A? ' F@' I=C@' F=C>@' AC'
AE ' A1' F@' >AAE ' A1' =?A F@C' F@' @>= ' DA @ A?' C@ J = ? '
?' F@' AG?@C' =?E' F@' D=C ' J = ' I@' > ' A1' C@ D= ' =?E'
=C @? ' ?' 1C= E @? ' A?B@C ?>' F@' =J @' A' F ' AG?' @' N d
?E' F ' C @' =DD@=C ' A' FA E' ? B@C = ' ?' Fp' = @' A1' @CB=? '
GFA @' DA @ A?' A1' F@ C' J = @CH ' >AAE ' I ' F@ C' E@ B@C ' AC' D@CT
J A?' ' F@' DA @ A?' A1' F@' J = @C' F J @ 1' " B
?' DDAC ' A1' F ' J =] J' A1' F@' AJ JA?' =G' F@C@' = E' EAG?' '
G ' I@' DCAD@C' A' @' AJ@' = @ ' ?' GF F' ' F= ' I@@?' C@ A>? K@E'
F@' C@ @? ' = ' ?A @E' .' D' 8' = ' A' I= @@ ' I@ ?>' 1A ?E'
> ' A1' =C @? ' GA E' =DD ' A' AJ@' A1' F@' = @ ' FA >F' ' J '
I@' C@ J @ J I@C@E' F= ' F@' D ? F J @? ' ' JAC@' @B@C@' GF@C@' =' D@C A?

W+b' 2' */=' 49+ '' 6 J' #/+(' &' 49/' ! /2' I' 1' AA' =' HN' W b? +' 42' 9+(:'
2&&/ '1/' 7+' 12 ; ; 44/ :' +&4/(49/' GA49' *+32<(' 1 ' =// J2*' .' """ ' EM' E.' ? .'
<*#' .EY I ' //J2*' .' "' DH "' A.' ? +' 42' 2&&/ '1/=' 2 ''49/' =/+' =/' =/1'
" B 9 ' 1*+<=/' ' 4+0/ '' &(2 ;' 49/' G' '1' . .A' J2*' .' "' .I' 9/' 14' :2/=' '24' /H
! /2' I' M' GN' =' IY' +' :' 49/' N ! /2' I' 4/ ' :' 42' 124*+' :
1' AY' =' HN' W b' 9/' 72(:' '' '+(/' W1b' G' +=4' ' '1' .Y' =' .I' "' AY'
4+0/ '' &(2 ;' 49/' ' /V4' =/14 2 '' '' /+19' 2& ' O ' +' :' 49/' +<492(4 /' 149/(/' 14/W
492=4' 14=? +' :' 49/ ('=/(4 2 '' ; +0/' ' :'=// +' 42' +' 3+(/' 19+()' 2& /<=42 :?
49 ' 1*+<=/' +' :' 49/' ' /V4' 12 /V4/ '=' J/' +' ' :'"' .EH
42' 49/' "/(=2 '' 42' 792 ;' 49/#' +" "*#' 9/' W:b' G' +=4' ' M ' 3 :' J .' "' HH
72(:' 0/ ; "*2#/($ ' 4+0/ '' &(2 ;' 49/' N

' d' 8 'D 5' 5' & ' ' 8 ' ?, H..

I@ ?>' =' @CB=? %' @= ' F ' J = @CH 'DCAD@C ' F=?' ?'=' = @'A1' JD @' =C @?

F@' DC A?@C%' =' F@C 11H ' A11 @C%' ?E@C' =' GC '4!'*! "!'*6 !6 ' =>= ? ' A?@' @ %' @ K@E' F@'>AAE ' ?' @ H 'FA @%' = J A?> 'GF F'G@C@' AJ@' @?> =B ?> ' ?' =' A <@E' A @ ' ! @%' C@ J AB@E' =' I@=E' 1CA J' F@' EAAC' A1' F= ' A @ %' AA<' A ' F@' @?>C=B ?> %' =?E' A E' F@ J ' 1AC' F ' AG?' @ ' DA?' =?' ?E J @? ' =>= ? ' F J ' 1AC' =C @? %' ' G= ' C>@E' F= ' F ' G= ' 4= IC@=AF' A1' C 'A? ;' I %' DA?' F@' DA ? ' I@ ?>' =B@E%' F@'Z E>@ ' F@ E' ' =' =C @? ;' A?' F@' >CA ?E' F= ' F@' A11 @C' F=E' F@' AE ' A1' F@' >AAE ' A? %' <@' =' @CB=? %' =?E' ?A ' F@' @>= ' DA @ A?%' N@d

9/(&&S= 2 & 1/(1*+ 'P : /=4 ' /*# =/**p ')')22:= ' */J /:

' =C @C' >A ?>' =G= ' G F' F ' J = @CH ' =C ' G= ' FA E@?' A' F=B@' I@@?' > ' A1' 1@ A? 'NMd

+(4/(_)2 ')' +7+# 7 49 9 = ; +=4/(S= 1+(4

F@' DC A?@C' GFA' ;B= ' @CB=? ' =?E' DAC @C' ?' F@' >@?@C= ' @ J D A ' A1' F@' DCA @ AC%' G= ' @? ' G F' =' D= <=>@' A1' >AAE ' 1CA J' F ' J = @CH ' FA @%' G F' E C@ A? ' A' E@ B@C%' F@ J ' A' =' A J @C' = ' =' D=C =C' D = @ ' ? @=E' F@C@A1' F@' DC A?@C' A E' F@' >AAE %' =?E' A?B@C @E' F@' J A?@ ' A' F ' AG?' @ ' F@' Z E>@ %' A?' =' = @' C@ @CB@E%' F@ E' F ' A' I@' 1@ A? %' A?' F@' >CA ?E' F= ' F@' DA @ A?' A1' F@' >AAE ' ' C@ J = ?@E' ?' F@' J = @C%' 123

' =C @C' >A ?>' =G= ' G F' F ' J = @CH ' =C ' G= ' FA E@?' A' F=B@' I@@?' > ' A1' 1@ A? 'NMd

?' =' = @' GF@C@' F@' J = @C' A1' =' =D C@E' B@ @' >A ' DCAD@C ' 1CA J' F@' B@ @' =?E@ ?@ ' ?E@C' D=C =C' C J =? @ %' ' @@ J ' A' F=B@' I@@?' F@ E' ?A ' A' = J A ?' A' =C @? ' F@' B@ @' G= ' 5C =?%' @? ' ?' I ' =' C F' C @C%' =?E' = ' 1 C ' ACE@C@E' A' I@' C@ AC@E%' I ' =1 @CG=CE %' FA @ ' IC@=< ?>' A ' G F' 5C =%' A?E@ J ?@E' = ' DC K@' A' F@' < ?>%' = ' F=B ?>' I@@?' =<@?!' I@1AC@' FA T @ ' F@' =D = ?' A1' F@' B@ @' AE>@E' A?' FAC@%' I ' G@? ' A = A?= ' A' F@' F D;' F@' F D <@@D@C%' GFA' G= ' =DDA ? @E' GF@?' F@' F D' G= ' ICA >F ' ?%' <@D ' F@' <@ ' A1'' F@' F= F@ %' =?E' GA' AJ FA @' A11 @C ' =?E' ? ?@' A1' F@' AC > ?= ' C@G' C@ J = ?@E' A?' IA=CE ' F@' DCAD@C ' ?' b @ A?' G= ' @ C@ ' A?B@ @E' 1CA J' F@' F D%' =?E' 1A ?E' = ' F@' J = @CH %' AC' = ' =' D = @' A' GF F' F@' F=E' @? ' %' =?E' ' =DD@=C@E' F= ' =' I < F@=E' F=E' I@@?' ICA<@?' A' >@ ' = ' D=C ' A1' F' DCAD@C ' ' F=J IC@%' %' EA I @E' GF@ F@C' F ' C@>= ? ?>' F@' DA @ A?' A1 ' GF= ' F=E' I@ A?>@E' A' F@' J = @CH ' AG?@C ' =?E' F=E' I@@?' @? C @E' A' F ' =C@%' = J A ? @E' A' =' =C @? %' =?E' =B@E' F@' DA ? ' ?E' J = @ ' F@' DC A?@C' G= ' C@ A J T J @?E@E' 1AC' =' D=CEA? ' I!3

' 12('&+142(9+J ')' "<(P 19+=/ :' +' 1+()2 2& 2+4= 2 '' 92+(:' +' =9 "' =/ ' 4 9 = =/(P J+ ' 4 7 49 = 3+()/ 42' (/P 1/ J/ "+(4 2& 49/ 2+4= '

?' =' = @' GF@C@' F@' DC A?@C' F=E' I@@?' A?B @E' 1AC' @= ?>' 1AC ' I F@ ' A1' A= %' =' b @ A?%' GF@ F@C' F@' 1= ' = J A ? @E' A' 1@ A? %' G= ' C@ @CB@E' 1AC' F@' AD ? A?' A1' F@' Z E>@ ' F@' DCAT @ AC ' GFA' G@C@' AJ 1= AC %' F=E' D C F= @E' =' =C>A' A1' A= ' A?' IA=CE' =' F D' ?>' ?' F@' C B@C' F= J @ ' ;' =?E' F@ z' @? ' F@' DC A?@C' GFA' G= ' @ J D A @E' ?' F@ C' @CB @' = ' =' >F @C J =?%z' G F' F@ C' I=C>@%' A' & A?%' =' AC? J @ @C%' 1AC' = ' J F' A= ' = ' F@' I= !>@' GA E' =CC %' =?E' GF F' G@C@' A' I@' ICA >F ' ?' AA @

' /V' ' +=4+**' 19' ' .EGG' +' :' ' ' ' . . E' '' ' +#*/#' ' ' +#*/#' 4' =' 23=/(J/ :' 49+4' 49/(/' 7+=' '2' /J : / ' 1/' Www b' 23 '=2 'S= 1+=/ ' G' +=4' ' ' 42' =927' 49+4' 49/' ; +=4/(' 4220' 49/' "(2" /(4# 1' .Y' =' .Y' "' AYA' +(+ : 1/S= 1+=/ ' &2(' / ' 2"" 2= 4 2 '' 42' 49/' ' 4/ ' 4 2 '' G' +=4' ' M ' 1' .Y' =' .A' "' AYA 2& 9 =' 27 ' /(=' ? +' :' 49+4' ; 2=4' 2& 49/' 3B' +=S= /+=/ ' .' /+19' GA. ' -) ' G 6<:) /=' =// ; /' :' 42' 49 ' O' 4' 72<*: ' 9+J/' n +=4' ' ' 1' .Y' H' .A' "' AYY 3/ / '' *+(1/ '# & 9/' 9+: ' +' :' ' & 9/' W d /V' ' +' ; <6-/(' ' +#*/#' 9+:' ' 24

*22=/' 3<*0?
+' :' 43/' =/(P
J+ ' 4' 2(: /(/ :'
=2 ; /' 2&43/ ''
42' 3/' "<4' ' 42'
=+10=' 79 19'
9/' +&4/(7+(:=
/ ; 3/aa*/ :' ⋔
49 =' 7+=
* 2 : / '' 42' 3/'
*+(1/ '#

' =/(J+ '4'
=/ '4' 7 49' 9 =
; +=4/(S= 1+(4'
&2(' +' *2+ :' 2&
12+*=' 792'
&(+<: <*/ ' 4*#
: ="2=/= 2&
"'+(4' 2& 49/ ; '
+&4/(' 49/# 9+J/'
3// '' "<4' ''
49/' 1+(4' =
)< *4# 2& *+(P
1/ '#

I < ' F@' DC A?@C' DCA @@E@E' A' F@' F D%' =?Ez' C@ @ B@E' 1CAJ'
& A?' GA' F ?EC@E' =?E' G@? %' b =C @C ' A1' A= ' ?' AA @' I <%'
=?E' 1 B@' b =C @C ' ?' = < ' F@' 1 B@' b =C @C ' G@C@' D ' ?A'
= < ' F ' ACE@C' A1' F@' DC A?@C';' =?E' G@C@' =1 @CG=CE ' @J I@KK @E'
I ' F J ' F@' b @ A?' I J @E' A' F@' Z E>@ ' G= %' GF@ F@C'
F ' G= ' 1@ A? %' = ' F@' A= ' F=E' ?@B@C' I@@?' ?' F@' DA @ A?'
A1' F@' DCA @ AC! ;' AC' GF@ F@C' ' G= ' ?A ' <@' F@' = @' A1' ='
@CB=? ' C@ @ B ?>' F=C>@' A1%' AC' IC ?> ?>%' =' ! F ?>' 1AC' F ' J= @C%'
F ' ?@B@C' E@ B@C ?>' ' ?E' F@' Z E>@ ' F@ E' F= ' ' G= ' =C @? '
?' F@' DC A?@C';' =?E' =' =< ?>' 1CAJ' F@ %' = ' DA @ A?' A1' F@'
AG?@C%' = ' J F' = ' 1' F@' A= ' F=E' I@@?' ?' F ' >C=?=C %' 1!3

?' =?' ?E J@?' =>= ? ' F@' DC A?@C' 1AC' @= ?>' A= ' F@'
DCAD@C ' A1' " @G A?%' F ' ?= @C%' ' =DD@=C@E' F= ' " @G A?' E C@ @E'
F@' DC A?@C%' F ' @CB=? %' A' >A' A' =' = A?' G F' F ' =C ' 1AC%' @?'
G ' A1' A= %' =?E' A' IC ?>' F@' A= ' A' F ' FA @';' =?E' F@' DC T
A?@C' = ACE ?> ' G@?' A' F@' = A?' G F' F@' DCA @Z ACH' =C %'
=?E' C@ @ B@E' 1CAJ' F@' GF=C1 ?>@C' A1' F@' * @EG= ' AJD=? %' G F'
GFAJ' F@' DCA @ AC' E@= %' @?' @G ' A1' A= %' GF F!G@C@' D ' ?'
F@' =C ;' =?E' D=C ' A1' GF F' F@' DC A?@C' 1C= E @? ' E DA @E' A1'
1CAJ' F@' =C ' ' G= ' AIZ@ @E' F= ' F@' DA @ A?' A1' F@' A= '
F=E' ?@B@C' I@@?' ?' " @G A?;' I ' F@' A C ' F@ E' F= ' F@C@' G= ' ='
A? C B@' DA @ A?' ?' F@' J = @C;' =?E%' DA?%' =' = @' C@ @CB@E%'
' G= ' F@ E' F= ' F@' DC A?@C' G= ' DCAD@C ' A?B @E' A1' =C @? '
ACE' =JDI@ %' ' $ F@C@' =?' I@' ?A' EA I ' F= %' ?' F' ='
= @%' F@' >AAE ' J ' 'F=B@' I@@?' ?' Fb' = = ' AC' A? C B@'
DA @ A?' A1' F@' J = @C%' =?E' F= ' 1' F@' J = @C' F=E' ?A ' A F@CG @'
F@' DA @ A?' A1' F@' J ' F=?' I ' I@' I=C@' C@ @ D ' A1' F ' @CB=? %'
DA?' F@' E@ B@C ' A1' =?A F@C' 1AC' F@' J = @CH' @%' = FA >F' = '
=>= ? ' F CE' D@C A? ' F ' ' ?' =G' =' C@ @ D ' A1' F@' >AAE ' I ' F@'
J = @C%' @ %' ?' C@ D@ ' A1' F@' @CB=? ' F J @ 1%' F ' G ' ?A ' DT
DAC ' =' F=C>@' A1' =C @? ;' I@ = @' = ' A' F J ' F@C@' &= ' ?A' AC A '
=< ?>' ?' F@' 1 C ' ? =? @%' =?E' A? @b @? ' ?A' C@ D= ' F@C@T
1AC@' 1' F@C@' F=E' I@@?' F@C@' '=' b =? ' A1' A= ' E@ B@C@E' A' F@'
DC A?@C' 1AC' F@' DCA @ AC%' =?E' F@' DC A?@C%' F=B ?>' C@ J = ?@E' ?'
F@' D@C A?= ' DA @ A?' A1' F@ J %' = ' I ' =CC ?>' F@ J ' A?' F ' I= <'
?' =' I=>%' G FA ' =? ' F ?>' F=B ?>' I@@?' EA?@' A' E@ @C J ?@' F '
AC > ?= ' @] B@' DA @ A?%' F=E' A?B@C @E' F@ J ' 6 !& 4' *>"6 #! '
F@' GA E' F=B@' I@@?' > ' A1' @ J I@KK @ J @? %' =?E' ?A ' A1' =C @? '
' 1' F@' @CB=? ' F= ' EA?@' =? F ?>' GF F' E@ @C J ?@ ' F ' AC > ?= '
@] B@' DA @ A?' A1' F@' >AAE %! A' F= ' F@' J = @C' F@C@ I ' AJ@ '
A? C B@ ' ? A' DA @ A?%' =?E' F@' @CB=? ' =1 @CG=CE ' A?B@C '
F@ J ' 6 !& 4' *>"6 #! ' F@' ' > ' A1' =C @? %' =?E' ?A ' J @C@ ' A1' ='
IC@= F' A1' C ' = ' AJ J A?' =G%' AC' A1' @ J I@KK @ J @? ' ?E@C' F@'
= @ ' ?' F ' DDA A?' F@' I @b @? ' =<@ ' F@' >AAE '
AC A ' ?' A?B@C ?>' F@ J %' =?E' AJ J ' =' C@ D= ' & @' F=B@%'
F@C@1AC@%' A' A? E@C' GF@ F@C' F@' @] B@' DA @ A?' A1' F@' A= '
A? ? @' G F' F@' DC A?@C' EA G?' A' F@' J @' A1' F@' A?B@C A?'
' = J ' A1' AD ? A?' F= ' F ' @] B@' DA @ A?' G= ' E@ @C J ?@E

W B' "'/+(S' 1+=/' G' /+19' EGA' G +=4' ' 1' .Y' =' .Y' "' AYE' //'
'' 6 3' // : ' /+(=' ' +4' "' GYH' +' 12"#] 2& 49 =' 1+=/' &(2 ; ' 49/' *+10' 220'
79 19' 2 ; 4=' 49/' "+(4=' 3/47 // '' 3(+10/4=
'' 49/' 4/ V4' +' :' (/&/(((/ :' 42' #' A' +' :' :'
927' AG' 9/')(2< ' :' 2& 49/' : /4/ ' ' '

+4 2 '' ; / ' 4 2 ' / :' 3#' /+49' ' '' U +*=9&'
1+=/' ' +<' 4' GDY' 7+=' 49+4' 49~' 12(''
7+=' '' 49/' "(2=/1<42(S' 3+( ) /' +' :' 4' 7+='
+' 4+0 ')' &(2 ; ' 49/' ; +=4/(S' "2==/== 2 '' +='
; <19' +=' &' 4' 9+ :' 3// '' &(2 ; ' 49/' ; +=4/(S'
)(+' +(#

GF@?' F@' A= ' G@C@' E@DA @E' ?' F@' DCA @ ACH' =C %' ?' F@' = J @' J =??@C' = ' 1' F@ ' F=E' F@@?' E@DA @E' ?' F@' DCA @ ACH' @ =C%' A1' GF F' F@' DC A?@C' F=E' F@' =C>@ ' NM d F@' DCA @T AC' G= ' ?EA I @E ' ?' DA @ A?' A1' F@' =C ' = ' F@' J @' GF@?' F@' A= ' G@C@' E@DA @E' ?' %' =?E' 1' F@' DC A?@C' F=E' =CC @E' A11' F@' =C ' 6 !& 4 '*>"6 #! ' F@' GA E' F=B@' I @@?' > ' A1' =C @? ' 1 3' F@C@' @@J ' A? E@C=I @' E 11 ' ?' A? @?E ?>' F= ' 1' F@' J = @C' G= ' ?' DA @ A?' A1' 4F@' =C %' F@' G= ' ?A ' ?' F@' DA @ A?' A1' F@' A= ' GF F' ' A? = ?@E%' F@' A= ' I @ ?>' F ' DCAD@C ' =?E' E@DA @E' F@C@' I ' F ' ACE@C ' 1AC' F ' @' ' G= ' =C> @E' F= ' F@' >AAE ' C@ @ B@E' I =' @CB=? ' C@ J = ?' ?' F@' @] B@' DA @ A?' A1' F@' @CB=? ' ' F@ ' F=B@' C@= F@E' F@ C' J = @' E@ ?= A?%' I '?A' E@1 ? A?' A1' [' J = @' E@ ?= A?%n' GF@?' A' @E%' A E' I@' > B@? ' ' G= ' =E J @E' F= ' F@' J = @CH ' A? C B@' DA @ A?' BA E' I@> ?' I@1AC@' F@' A= ' G@C@' E@DA @E' ?' F@' @ =C!%' GF@?' F@' =C ' A? = ? ?>' F@' A= ' F=E' ADD@E' = ' F ' EAAC%' =?E' @B@?' GF@?' ' F=E' @? @C@E' F ' >= @ ' ' ' A? E@C' F@' DA ? ' A1' J @' A' I@' C@>=CE@E' ' F= ' GF@?' F@' A= ' G@C@' E@DA @E' ?' F@' =C ' F@? @1AC F' F@' DC A?@C' I=E' A? ' F@' AE ' AC' F@' F=C>@' A1' F@' A= %' = ' =' I @C' F= ' A1' I ' J = @CH ' D = @%' AC' =' >CAA J ' A1' F ' J = @CH ' FAC @ ' A' F ' A? A?' ' FA E' F=B@' A J @' DA?' DC ? D @%' =?E' ' F ?<' F= ' 0E 6"P ' 6 ' N J d' ' =?' @] DC@ ' = FAC ' ?' DDAC ' A1' H 1 @C' = ?>' F= ' = @' 1CA J ' F@' = <' AA<%' F ' ACE F D' DCAT @@E@E' $ ` 7 ?' F= ' = @' F@' b @ A?' G= ' GF@ F@C' F@' AC?%' GF @' ?' F@' DCA @ ACH ' LI= >@%' ?' GF F' ' G= ' A' I@' I CA >F ' I ' F@' DC A?@C' A' F@' DCA @ ACH ' >C=?=C %' G= ' A' I@' A? E@C@E' ?' F@' DCA @ ACH ' DA @ A?%' =?E' F@' Z E>@ ' ?=? J A ' F@ E' F= ' 1CA J ' F@' J @' A1' ' F=B ?>' I@@?' D ' ? A' F@' I=C>@' ' G= ' ?' F@' DCA @T ACH ' DA @ A?% = FA >F%' F@' DC A?@C' F=E' F@' AE ' AC' F=C>@' A1' ' F= ' = @' F= ' I@@?' J @ ' I ' =' >>@ A?' F= ' F@' GFA @' =C>A' A1' AC?' J >F ' F=B@' I@@?' D C F= @E' I ' F@' DCA @ AC%' 7 3' A' F= ' F@' J >F ' F=B@' I=E' =' @' =?E' A? C B@' DA @ A?' I@1AC@' Y F@' E@ B@C ' A' F@' DC A?@C' $ I ' F@' B@C ' = @ J @? ' A1' Fu' f = @' ?' F@' = <' AA<%' =?E' F@' = FAC @ ' F@C@' C@1@CC@E' A%' F@G' F= ' F@' Z E>@ ' C?@E' = @? A?' A' F@' b @ A?' GF@ F@C' F@' @] B@' DA @ A?' A1' F@' @CB=? ' F=E' ?A ' I@@?' E@ @C J ?@E' I@1AC@' A?B@C A?%' NAd

F@' 1A AG ?>' ' =' = @' A1' =' J =C' ?= C@ ' F@' DC A?@C' G= ' ?E @E' N= ' ?' 0E 6"P ' 6 3' DA?' F@' - :' @A ' -%' ' : 8% 1AC' @= T ?>' 1 B@' b =C @C ' A1' A= ' 1CA J ' =' B@ @ ' A?' F@' ?=B >=I @' C B@C' F= J @ ' F@' DCA @ AC %' ?' GFA J ' F@' DCAD@C ' G= ' = E%' G@C@' AC?1= AC ' ; =?E' F@' DC A?@C' G= ' F@ C' @CB=? ' ; =?E' F=E' I@@?' @ J D A @E' I ' F@ J ' J =? ' @=C ' ?' D@C ? @?E ?>' F@' ? A=E ?>' A1' F@ C' AC?' B@ @ %' F@' DCA @ AC ' F=E' D C F= @E' G!A' F ?EC@E' =?E' 1AC b =C @C ' A1' A= %' A?' I A=CE' =' # F' B@ @ %' ?>' ?' F@

9/' "(2=/1<' 42(=' "<(19+=/ :' 12 ' :' 2 '' 92+(:' +' J' /==/*' +' :' =/ ' 4 49/ (3+()/' 42' (/ ' 1/ J/' 4' '' 3<*0 ' ? 79/ '' 49/ (=/(J+' 4' 792' 7+=' / ; P "*2#/ :' 3#

"% B 9/(/' =' '2' =4+4/ ; / ' 4 '' 49/' 1+=/' 49+4' 7+((+' 4=' 49/' "2= 4 2 '' 49+4' 49/' 12+*=' 9+:' /J/(3// '' '' 49/' "(=2 ' /(S=' "2==/=P = 2 '' +4' +**? 3<4' 4' =' =+ :' 3# 12< ' =/*' " ' .DI ' 0 9/' 12+*=' 7/(/' '' =+10=' +' :' 49/ ' '' "*+1/ :' '' 49/' ; +=4/(S=' 1+(4? $ 3<4' 4' =' ' 24' =4+4/ :' 792=/' 49/' =+10=' 7/(/ ' 2(792' "*+1/ :' 49/ ; ' '' 49/' 1+(4' &' 49/# 7/(/' "*+1/ :' '' 49/' 1+(4' 3# 49/' J/ ' :2(S=' ; / ' ' 49/ # 1*/ +(*# ' /J/(7/(/' '' 49/' "(P

=2 ' /(=' "2==/== 2 '

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2 B ' "' H.G

W ;B 4' =' =2' =4+4/ :' '' G /+19 ' EGA

W2B /) ' · //: ' /+(=' ' .YE'

GAD' +(0/ ' ' 72<*:' 9+J/' : &&/(/ :' '' 2" ' 2 ' ' 3<4' # /*: /:' 42' "/+(S=' 1+=/' +=' : (/14*#' '' "2 ' 4 ' /' '] ' 2(J+*' :' 2V' ' ' NA ' ' ' +#7+(: ' :' M ' ' ' A.E

49/ ;'42' =<"/(P '4/' :' 49/' : /* J/(#' =/"+P (+4/ :' +' "+(4' &(2 ;'49/' (/=4' 9*/' 2" 32+(:' 49/' J/==/*' +' :' / ; 3/aa*/ :' 4-? +' :' 4' 7+=' 9/*:'42' 3/' *+(1/ '#

C B@C' F= J @ ;' =?E' GF @' F@' AC? J @ @C ' G@C@' ?' F@' = ' A1' ? A=E ?>' F@' A= ' 1CA J ' F@' # F' B@ @ ' ? A' F@' DCA @ AC H I=C>@%' F@' DC A?@C%' G F' =?A F@C' D@C A?%' =J @' = A?> E@' ?' =' IA=%' F=?E@E' @?' @ J D ' = < ' A?' IA=CE' F@' # F' B@ @ %' =?E' E@ C@E' F= ' F@' = < ' J >F ' I@' 1 @E' G '" A= %' =?E' @E%' = ' F@ ' G@C@ >A ?>' A' I@' D ' ? A' =?' D A ? C ' > IA= ' @' = A' E@ C@E' F= ' F@' = A ? ' A1' F@' A= %' D ' ? A' F@' = < % J >F ' I@' =CC @E' A' F@ AC@%' =?E' ?A' @D=C= @' = A ? ' A' I@' ?'=E@' A1' F@ J ' F@' GFA @' A1' F@' GA' F ?EC@E' =?E' 1AC ' b =C @C ' A1' A= %' @] @D ?>' F@' 1 B@ Yb =C @C ' D ' ? A' F@' = < ' I ' F@' DC A?@CH' E@ C@%' G@C@' A=E@E%' ?' AA @' I <%' ? A' F@' DCA @ AC H I=C>@ ' 1 @C' F@' = < ' G@C@ 1 @E%' =' D@C A?%' I ' F@' DC A?@CH ' E C@ A?%' AA<' F@ J ' =G= ' 1CA J ' F@' B@ @ ' A' =' D = @' GF@C@' F@ ' G@C@' E@ B@C@E' A' F@' D@C A?' GFA' D C F= @E' F@ J ' A1' F@' DC A?@C ' F@' DC A?@C' F=E' ?@B@C' I@@?' @ J D A @E' I ' F@' DCA @ AC ' A' @ ' AC?' 1AC' F@ J ' ;' ?AC' G=' F@ = FAC K@E' A' A' EA' F@' Z C ' 1A ?E' F@' DC A?@C' > ;' =?E% DA?' =' = @' C@ @CB@E%' F@' Z E>@ ' G@C@' A1' AD ? A?' F= ' F@' A?B T A?' G= ' C >F %' NDd' ' ' AI @CB@E' F= ' ?' F ' = @' F@C@' =DD@=C ' A' F=B@' I@@?' =' AC ' A J J @E' I ' F@' @CB=? ' ?' F@' B@C ' = ' A1' F@' =< ?>;' F= ' F@' DCAD@C ' A1' F ' J= @C ' ?' F@' AC?' G= ' A J T D @ @' I@1AC@' F@' E@ B@C ' A' F J ';' =?E' F= %' =1 @C' F@' D C F= @' A1' ' ?' F@' B@ @ %' F@ ' F=E' =' =G1 ' =?E!@] B@' DA @ A?' A1' ' = ' =>= ? ' F@' GAC E%' I ' F@' AG?@C' A1' F@' B@ @ % 1 3

& F@C@' DCAD@C ' GF F' F@' DCA @ AC ' F=E' IA >F ' G= ' G@ >F@E' A ' ?' F@' DC@ @? @' A1' F@ C' @C<%' =?E' E@ B@Z@E' A' F@ C' =C @CH' @CB=? ' A' =C %' GFA' @ ' A F@C' D@C A? ' =<@' =G= ' F@' =C % =?E' E DA @' A1' F@' DCAD@C ' 1AC' F ' I@?@1 ' ZA ? ' G F' F= ' A1' F@' A F@C' D@C A? %' F@' =C @CH' @CB=? %' = ' G@ ' = ' F@' A F@C' D@C A? %' G= ' F@ E' A' I@' > ' A1' =C @? ' = ' AJ JA?' =G ' DA?' =?' ?E J @? ' 1AC' =C @? ' A1' I=C =%' = E' ?' A?@' A ? ' = ' F@' DCAD@C ' A1' ' C =? %' ?' =?A F@C' = ' F= ' A1' F@' DCA @ AC %' ' =DD@=C@E' F= z' F@' DCA @ AC ' A? C= @E' 1AC' AJ@' I=C =' ?>' = ' F@' A?EA?' EA < ;' F@ C' @C<' G@? ' A' @@' ' G@ >F@E%' =?E' =1 @C' F=B ?>' I@@?' G@ >F@E' ?' F ' gaC@ @? @%' ' G= ' E@ B@C@E' A' A?@' A1' F@' DC A?@C %' =CE ?>%' =' =C J =?H' J =?%' A' =C ' ?' F@' =C ' A1' =? %' GFA' G= ' F ' J = @Cz ' A? C B=? @' I@ G@@?' =CE ?>' =?E' F@' A F@C' DC A?@C %' F@' @1 ' F@' =C ' A?' F ' G= ' A' F@' DCAT @ AC H =?E' F@' A F@C ' ECAB@' ' =G= ' =?E' E DA @E' A1' F@' I=C =' =GC@? @%' %' A E' F@' Z C ' F= ' 1' =CE ?>' G= ' A' C@ @ B@' =? ' I@?@1 ' 1CA J ' F@' E DA A?%' F@' G= ' @b = ' > ' G F' F@' A F@C' DC A?@C ';' =?E' F@' Z C ' 1A ?E' = ' F@' DC A?@C ' > ;' =?E% DA?' F@' DA ? ' I@ ?>' =B@E%' GF@ F@C' = ' F@' I=C =' G= ' E@ B@C@E' A' =CE ?>' A' =C %' F@' =< ?>' = J A ? @E' A' =C @? %' F@' Z E>@ ' F@ E' F= ' ' E E' GF@ F@C' F@' >AAE ' G@C@' A? E@C@E' = ' F@' DCAD@C ' A1' F@' DCA @ AC ' AC' A1' C =? z%' 7"3

*A?@ ' ?' DA T @ A?' A1' F@' J= @C' I ' F@' F=?E ' A1' =' @C<

A' 1' F@' J A?@ ' F=E' I@@?' ?' F@' DA @ A?' A1' F@' J = @C' I ' F@' F=?E ' A1' A?@' A1' F ' @C< %' =?E' =?A F@C' A1' F ' @C< ' C@ @ B@ ' 1CA J ' F' @C<' =?E' @ J I@KK @ ' %' F ' ' =C @? %' N d

R B' 3(+9+4$=' 1+=/' G' /+/9' EGI' G' +=4' ' ' 1' .Y' =' .Y' " ' BYN ' *P 492<)9' 4' =' ' 24' /V" (/==*#' =2' =4+4/ :' ''49/' (/"2(4=' #/4' 4' =' 1'/+(*#' 42' 3/' '&/ (/ :' 49+4' 49/' =+10=' 2&' 2+4=' 7/(/' '24' "<4' '42' 4* /' "(2=/1<42(=' 3+()/' +' ' 49/' ;+() '+*' '24/' ' /+19' =927=' 49+4' 49 =' 7+=' 49/' 1+=/' ' ' !

W^B' G' +=4' ' ' 1' .Y' =' .Y' " YDM ' /V' ' +(:') ' ' +#*/#' ' =?E' 6' ' ' .GA' ' F=B@' '=/(4/ :' F@' & ACE ' I@ G@@?' I C= <@ ' 1CA J ' ' ' =' F@ ' @@J' A' J @' J DAC =?' A' I@' =EE@E' ' ' ' >

" B' 6 0' .: <((+#' ' ' ' ' ' ' GDY' Y' ' ' ' .IA' / 3 .' 4' 7+=' *+(

DA?' =?' ?E J @? ' 1AC' @= ?>' =' F@ 1@C' ' =DD@=C@E' F= ' F@' DCA @ AC' F C@E' F@' DC A?@C' A' =<@' =' F@ 1@C' 1CA J ') AC<' A' 6 CI ' * @C A?' ;' F@' DC A?@C' G= ' A' C@ @ B@' GA' F ?> ' 1AC' =< ?>' F@' F@ 1@C' F@' =J @' E= ' A' D @' @ <%' @?' J @ ' 1CA J ') AC<%' GF F' G= ' D= E' GF@?' F@' AA<' F@' F@ 1@C' ?' F=C>@%' =?E' F@' G= ' A' C@ @ B@%' GA' F ?> ' J AC@' 1AC' =< ?>' F@C' A' 6 CI ' * @C A?%' GF@C@' F@' D !A @ AC' B@E%' F@' ?@] ' J AC? ?>' F@' DC A?@C' F=B ?>' C@ @ B@E' F@' F@ 1@C%' AA?' =1 @C' =?E' BZ FA ' = FAC ' A E' F@' F@ 1@C' = ' F ' AG?%' =?E' @ J I @KK @E' F@' DCA @@E ' F@' Z C ' ?@>= B@E' F@' @] T @? @' A1' =? ' 1C= E @? ' ? @? A?' DC@B A ' A' F@' E@ B@C ' A1' F@' F@ 1@C' A' F@' DC A?@C%' I ' 1A ?E' F J ' > ;' =?E%' DA?' =' = @' C@ @CB@E%' F@' Z E>@ ' F@ E' F@' A?B A?' C >F %' F@' DA @ A?' A1' F@' DC A?@C' I @ ?>' F= ' A1'=' @CB=? ' A? %' 1 3

' GF@C@' F@' DE J @? ' = @>@E' F= ' F@' DC A?@C%' GF ' F@' @CB=? ' A1' F@' DCA @ AC %' F=B ?>' D C F= @E' D > %' GF F' F@ ' <?@G' GA E' ' AA @%' =' D >' E@= @C' = ' @@E %' @?>=>@E' F@' DC A?@C%' =' I F@C' =?E' ECAB@C' = ' " @G = @%' A' >A' G F' F@' D > ' I ' C= G= ' 1CA J ' " @GT = @' A' @@E %' =?E' F@C@' E@ B@C' F@ J ' A' AA @%' =?E' I C ?>' I= <' A' F@' DCA @ AC ' F' J' ?' DA A11 @' ACE@C ' AC' =' I =?<@CH' F@b @' = ' AA @' FA E' > B@' F J' A?' I @ ?>' FAG?' =' D=D@C' GF F' F@' DCA @ AC ' >=B@' A' F@' DC A?@C' 1AC' F= ' D CDA @%' F@' A? @? ' A1' GF F' G@C@' ?A ' ?' @B E@? @ ' F@' DC A?@C' F=E' ?A' = FAC ' A' @ ' F@' D > %' ?AC' A' E!A' =? F ?>' G F' F@ J ' I ' E@ B@C' F@ J ' A' AA @%' =?E' ?A' ? C A? ' G@C@' > B@?' A' F J ' = ' A' GF= ' F@' G= ' A' EA' G F' F@ J ' FA E' AA @' C@1 @' A' = @D ' F@ J ' FI ' DC A?@C' AA<' F@' D > ' A' @@E %' =?E' G@? ' G F' F@ J ' A' AA @H ' FA @' ?' F@' J AC? ?>' GF ' = ' F@' ?J = @ ' G@C@' ?' I@E ' AA @' F J @ 1' G= ' 1CA J ' FA J @%' =?E' FA >F' F ' G 1@' G= ' =GA<@' I ' F@' DC A?@C%' ?A' = @? A?' G= ' D= E' =?E' ?A' E C@ A? ' > B@?' A' F J ' F@' DC A?@C' F@?' AA<' F@' D > ' A' F@' @@E ' D >' J =C<@ %' =?E' A E' F@ J ' A' =' DAC<' I F@C' F@' =J @' J AC? ?>%!' C@ @ B@E' F@' DC @%' =?E' = I T A?E@E' G F' ' F@' DC A?@C' F=E' I @@?' 1C@b @? ' @ J D A @E' I ' F@' DCA @ AC %' ?' F@' =D= ' A1'!=' I F@C%' A' = >F @C' =?E' ' D' D > %' , %' 1AC' GF F' F@' G= ' D= E' I ' F@' ZA I ' ;' I ' F@' F=E' ?@B@C' I@1AC@' I@@?' @ J D A @E' I ' F@ J ' = ' ECAB@C ' @' F=E' GA' DA ?E ' > B@?' F J ' 1AC' @] D@? @ %' 1AC' GF F' F@' G= ' A' = A ? ;' ?A F ?>' G= ' = E' = ' A' F@' J =??@C' ?' GF F' F@' G= ' A' I @' D= E' 1AC' F ' CA I @%' I ' F@C@' G= ' =?' @ =I F@E' A J ' ?' F@' C=E@' A' C@ J ?@C= @' ECAB@C ' 1AC' F' @CB @ %' I ' =' D= J @? ' A1' =' J' D@C' E @ J ' 1AC' F@' ? J I @C' A1' E= ' A D @E;' ?A F ?>' G= ' @] DC@ @E' A?' F@' IZ@ ' A1' F@' DC A?@CH ' I @ ?>' = ' I @C ' A' EC B@' = @' 1AC' =? ' A F@C' D@C A?' = ' F@' = J @' J @%' I ' I ' F@' =>@' A1' F@' C=E@' F@' G= ' = ' I @C ' A' EA' A' F@C@' G= ' ?A' @B E@? @' A1' =? ' ? @? A?' A?' F@' D=C ' A1' F@' DC A?@C' A' @= ' F@' D > ' = ' F@' J @' A1' F@ C' I @ ?>' E@ B@C@E' A' F J ' F@' = =? ' I =CC @C' EA I @E' GF@ F@C' F@' DC A?@C' G= ' =' @CB=? %' =?E' = A' GF@ F@C' F@C@' G= ' =' =< ?>' I ' F J ' GF F' = J A ? @E' A' =C @? ' D- ' ' B ' Y44# : 4# ' ' 1>3'

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' : (2J/(' 7+=' / ; "*2#/ :' 2 " +' = ',)*/' 211+P = 2 '' 42' 4+0/' 4/ '' ") =' 42' M ' +' :' 42' 3(')' 3+10' 79+4/ J/(; 2 ' /# M ' =92<*:' : /* J/(' 42' 9 ; ' /' 9+ :' ' 2' +<492P (4#' 42' 3+()+ '' 7 49' M ' 2(+' # "49/(' " /(P =2 '' ' 2(42' : 2' +' #49 ')' 7 49' 49/' ")=' &' M ' (/&<=/ :' 42' (/P 1/ J/' 49/ ; /' (/1/ J/ :' +' =< ; ' &2(49/' /V "/ ' =/=' +' :' +112(: ')' 42' <=+)/' 72<*:' (/1/ J/' =2 ; <19' +' :+# &2(9 =' 4(2<3*/ ' +' :' +112(: ')' 42' 49/' <=+)/ ' 9/' ;)9' 9+J/' 4+0/ '' 1+44*/' &2(249/(' "/2"*/ ' 3<4' '2P 49 ')' 7+=' =+ :' +' 49/' 4 ; /' 49/' ")=' 7/(/' : /P * J/(/ :' 42' 9 ;' +=' 42' 49 =' /' 7/ ' 4 42' M S' 92<=/ ' 3<4' 49/' ")=' 7/(/' '24 (/1/ J/ :' 27 ')' 42' M S' +3P =/ ' 1/' ? 9/' 49/ '' 4220' 49/ ;' 42' ;+(P 0/4 ' +' :

1/ ' #' ' ' ! ' //' ' & ' 220/ ' IM *+(1/ ' #' +4' 12 ; ; 2 '' *+7 ' 72<*:' 3/' =2' ' ' ' ' YE' ' **/=' <' : /(' 49 =' / ' +14 ; / ' 4' /' 49/' &2**27 ')' 6 3 ' +10=2 ' ' G' 22' ' ' ' 1+=/=' : /1 : /:' 3/&2(/' 49/' 14 ' ' & ' HG' ' 9 =' 1+=/' 7+=' : /1 : /:' 3/&2(/' 49/' GI' 4210 ' ' ' ' ' ' ED' S' /V &' ' GA' /4 ' 1 ' NY ' =' H ' '24 1/ :' 6 + ; //' ' ' ' ' ' ' HYE "' .HA' * =' + ' :' = ; *+(' 1+=/=' &' ' 24 W]d' .' "' H.N

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E C@ @E' F@'Z C ' F= ' 1' F@Z'' I @ @B@E' F@' G ?@ @ ' F@' DC A?@C'
G= ' F@' @CB=? ' A1' F@' DCA @ AC ' =?E' F= ' F@' =< ?>' = JA ? @E'
A' =C @? ' 1' F@' DC A?@C' A E' F@' D > ' 1AC' F@' D CDA @' A1' =DDCAT
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@ J D A @C ' A?' G F= ' F@' A? E@C@E' =?' @ J @C>@? ' ?A ' DCAB E@E' 1AC'
I ' F ' ? C A? ' F@'Z C ' 1A ?E' F@' DC A?@C' > ' =?E' DA?'
=' @= @' C@ @CB@E' =1 @C' A? E@C= A?'' I ' 3 FA ' =C> ?C@? '
5=C<@' ' F ' E@ B@C@E' Z E>J @? ' =1 @C' = ?>' F= ' ACE'
# @? J =?' ' ' E E' ?A ' =>C@@' G F' F@' C@ ' A1' F@' A C 'UNCAd
' F@' A? ' b @ A?' ' G F@ F@C' A?' F@' 1= ' = @E' F@' DC A?@C'
C@ @ B@E' F@' AE ' A1' F@' D > ' = ' =' @CB=? ' A1' F@' DCA @ AC '
AC' = ' =' I = @@' ;' ?' F@' = @C' = @' F@' A E' ?A ' I@' > ' A1' =C @? '
? @ ' F@' F=E' ? @?E@E' A' =DDCADC = @' F@ J ' A' F ' AG?' @' = ' F@'
J @' A1' F@' C@ @ D ' G F' G= ' ?A ' F@' = @' ;' ?' F@' 1AC J @C' F@'
GA E' I@' > ' A1' =C @? ' = ACE ?>' A' F@' 1 ?E ?>' A1' F@' Z C '
= ' A' G F' F@ ' G@C@' DCAD@C ' E C@ @E ' F@C@' =C@' @B@C= '
C@DAC @E' @= @ ' I @=C ?>' DA?' F@' b @ A?' G F@ F@C' =' D@C A?' ' =
J @C@' @CB=? ' AC' I= @@';' F@C@' =C@' ?A?@' DC@ @ ' <@' F@' DC@ @? '
FA >F' F@' = @' A1' = ?' B' = 6 & ' 7?3' ?@=C ' =DDCA= F@ ' ' 6'
F ' = @' A?' F@' A?@' F=?E' F@' C J =? @' F= ' F@' DC A?@C' G= '
D= E' F@' @]D@? @ ' A1' F@' = @' =?E' = A' F= ' F@' A J =C ' JAE@'
A1' D= J @? ' A1' F ' C@ J ?@C= A?' G= ' I ' F@' E= ' @?E' A' FAG' F= '
F@' G= ' =' J @C@' @CB=? ' ;' A?' F@' A F@C' F@' 1= ' A1' F ' I@ ?>' =' ECAB@C'
I ' C=E@' =?E' = A' A1' F ' F=B ?>' F@' I@C ' A' EC B@' F@' = @' A1'
=? ' A F@C' D@C A?' I ' F@' >@?@C= ' =>@' G F' C@ D@ ' A' ECAB@C '
C= @' =?' ?1@C@? @' F= ' F@' G= ' ?A ' =' @CB=? ' F@' @=C?@E' E@D '
C@ ACE@C' 1@ ' F J @ 1' I A ?E' I ' F@' E@ A?' ?' - ?' B' =>2< ' 7'3'
I ' F= ' = @' G= ' ?E@C' F@' .' ,' 9' @A' :' ' - ' ' : .' GF F' !
J =<@ ' @ J I @KK @ J @? ' I ' =' @CB=? ' AC' D@C A?' @ J D A @E' ?' F@'
=D= ' A1' =' @CB=? ' A' C@ @ B@' J A?@ ' 1@ A? ' ;' N d =?E' F@' C@ ACE@C'
A1' A?EA?' C@1@CC@E' F@' b @ A?' A' F@' Z E>@ ' GF@ F@C' F@'
DC A?@C' 1@ ' ?E@C' @ F@C' E@ C D A?' FA >F' 1' F@' ?E J @?'
F=E' I @@?' C@1@CC@E' A' ' G'=' ?@ @ =C ' A' DCAB@' F= ' F@' G= ' =
@CB=? ' F@' Z E>@ ' E@ E@E' F= ' F@' DC A?@C' G= ' DCAD@C '
A?B @E' =?E' A? @b @? ' F= ' F@' G= ' =' @CB=? ' AC' D@C A?'
@ J D A @E' ?' F= ' =D= ' =?E' = FAC @E' = ' F' A' C@ @ B@'
J A?@ ' A' F= ' F ' C@ @ D ' GA E' I@' =' E F=C>@' A' F@' E@I AC '
F ' ' ?A ' @]= ' F@' = J @' b @ A?';' ' ' GF@ F@C' F@' DC A?@C'
F=E' F@' AE ' A1' F@' = @' = ' =' @CB=? ' A' F@' DCA @ AC ' = ' F@'
J @' A1' F@' C@ @ D ' A1' F@ J ';' =?E' G@' F ?<' F@' A E' ?A ' I@' A'
A? E@C@E' ? @ ' ?' EC B ?>' F@' = @' A' F@' J =C<@ ' F@' G= ' F@ C'
@CB=? ' =?E' F@' DCA @ AC ' C@ DA? I @' 1AC' =? ' ?@> >@? ' = ' A1'
F ' ?' A' EC B ?>' F@ J ' F ' IZ@ ' F= ' ?E@C>A?@' J F' E T
A?' 1' = @' =?E' F= ' I @@?' D = @E' A?' ' DCAD@C' 1AA ?>' I ' F@' = @'
A1' I >6"& 6 ' B' - >& ' 163' =?E' A F@C' = @ ' A?@' A1' GF F' ' F= ' A1'
=' >@?@C= ' ECAB@C' GFA' G= ' F@ E' ?' ! !2 6 ' B' #2 ' 1:' ?A ' A' I@'
=' @CB=? ' A' = ' A' J =<@' F@' AG?@C' A1' F@' = @' C@ DA? I @' 1AC' F '
?@> >@? @' 1 @C' F@' 1 ' A? E@C= A?' G!F F' F ' IZ@ ' F= '
?E@C>A?@' G@' EA I ' GF@ F@C' - ?' B' (= 6 & ' GA E' I@' ?AG

"&' ' ' ' ' ' ' EDM "V' ' ' ' / 7' ; + ' =/' 7 9 19' 12 '4+ '='
"N' n (O/' ' *: / (=2 ' ' ' 2*47+ ' 49/=/' 72(:=' ' .! ' ACE.
' + ' :' 2*/(:) / ' " ' (* ' ')TT
"O' ' "" B " ' C ' J+' ' / ' DHD
W W' 7* . ' 24/ " B

3/47//''4B/' ' ='D@C A?' @?' AJ@'D > ' A'=' =E ' A'I@' AA<@E'= %'=?E' F@'DC A @C'
27''/(''"+(4 ')'
;//*#7 49'
49/'1'=42:#
+':''24'7 49'
49/' "2==/=2'

A E' F@'D > %'=?E'E E'?A ' =<@' F@J!A' F@' =E %'!G@F=B@' @@?' F='
F@'1C 'b @ A?' @1' A' F@'Z C 'G= %'GF@F@C' F@'DC A?@C'F=E'='
1@A? A ' ? @?'1CAJ' F@' AJJ@? @J@?'A1' F@' C=? = A?';' F@'
@ A?E%'GF@F@C'F@'C@ @B@E' F@'D > '='I= @@' A' E@='G F' F@J%'
AC'A? '='=' @CB=?'F=B ?>' F@' AE 'A1' F@J%'=?E'GFA @'E ' '
G=' A' IC ?>' F@J' I=<' 1' F@'DCA @ AC' J@=?' F@'DC A?@C' A'
@=B@' F@'D > %'=?E'IC ?>'I=<' F@' JA?@ 'AC'7J=<@'='I=C>=?'1AC'
F@'=@'A1' F@J%' F@?'F@'GA E'I@' ?' F@' =A?'A1'='I=@@%'=?E'
?A '> 'A1'=C @? ';I '1' F@'G@C@'E@ B@C@E' A' F@'DC A?@C'
JD ' F='F@' FA E' FAG' F@J' A' F@!=E' V'=?E'IC ?>' F@J'
I=<'IAE %' F@?'F@'F=E'A? ' F@' AE '=?E'?A ' F@'DA @ A?%'
=?E'G='> 'A1'=C @? %'R3B
DA?'=?' ?E J@?'I@1AC@' F@'=IAB@' '1AC' @= ?>']'A]@?%
'=DD@=C@E' F='F@'DCA @ AC'F=E'@JDA @E' F@'DC A?@C'A?@'AC'
G @'='='ECAB@C%'=?E' F='F@'D '@>F'A]@?' ?A' F@'F=?E'A1'
F@'DC A?@C'A'EC B@' A' A?EA?';' F@'DCA @ ACH'E C@ A?'A' F@'
DC A?@C'!BB@!@%' 1'F@' A E' @ ' F@J'A?' F@'CA=E' F@' J >F %'=?E'
FA @'F@'E E'?A ' @ 'A?' F@'CA=E'F@'G=' A' =<@' A' F@'DCA @ ACH'
=@ J=?' ?' J F1@E%'1AC'F J' A' @ '1AC' F@'DCA @ AC' F@C@;'
F@'DC A?@C'G='='I@C ' A'EC B@'A F@C' =@'='G@'='F@'
DCA @ ACH'A?' F 'A = A?';' F@C@' '='C@> =C' F=C>@'1AC'ECAB@C %'
A' J F'='F@=E';' A' J F'1AC' =@'EC B@?'=?E' A' J F'1AC' =@'
AE' F@'DC A?@C' AE' GA' A1' F@'A]@?' ?'F 'G=' A' A?EA?%'
=?E' AA<' F@' A F@C']' A' J F1@E%'GF@@@'LF@ AE' F@J';' F@'
JA?@ 'G='D=E' ? A'='I=?<' ?' J F1@E'1AC' F@'DC A?@C%'=?E'
F@'C@ @B@E' ' F@C@' 'G ?@ ' =@E' F='F@'DC A?@C'!G='='
=@ J=?'='G@ '='='ECAB@C';'=?E' F@'DCA @ ACH' =@ J=?'DCAB@E'
F='F@' ?@B@C'C@ @B@E' F@' I@= ' F='GF@?'='D@C A?' G='
@JDA @E' A' IC ?>'I@= ' A'F J%'F@' AJ@ J@'E@DA @E' F@J'='
?> A?'='F@' =@CH'='F@' AA @' =CE%'AC' AJ@GF@C@' F='
'G='F@'E 'A1' F@'ECAB@C' A'E@ B@C' F@J' A' F@' =@ J=?H'ECAB@C'
?' F@'@B@? ?>%'=?E' ?@]'JACD ?>' A' AJ@'=?E'>B@' F J' ?1ACT
J=A?%'=?E' @@' F='F@'F=E' F@J';' F='' 'G='?A'D=C'A1'F 'E '
A' @ 'F@J' ?' J F1@E' F@'DC A?@C'F=E'ICA >F'I@= '1CAJ'
F@'DCA @ AC'I@1AC@%'=?E'E@ B@C@E' F@J' A' F@' =@ J=?H'ECDB@C'
'G='IJ @E' F='F@C@' G='?A'1@A? A '=< ?>' ?' F@'1C '
?=? @';' F='F@'DC A?@C'G='?A'F@' @CB=?'A1' F@'DCA @ AC'
='=';'=?E' F='F@'DCA @ AC'F=E'D=C@E' G F' F@'C >F'A1'DA T
@ A?'='G@ '='F@' AE 'A1'F@' =@%'I '>B ?>' F@'DC A?@C'
F@'C >F' A1' @ ?>' F@J' 1'F@'D @=@E' 'G='=? G@C@E' F=%'
=FA >F' F@'AC>?='AG?@C F D' A1' F@'DC A?@C'G='='=G1 'A?@%'
@ 'F='AG?@C F D' @?E@E'='AA?'='F@'C@=F@E' F@' =@CH'='
?> A?%'=?E' F='F 'EC B ?>' F@J'I@ A?E' F='D=@'G='@] @@E ?>'
F 'AJJ A?%'=?E' F'=?' @>='= JD A?' A1' F@'DCAD@C '='
GA E' DDAC' F@' F=C>@'A1'1@A? ' F@'DC A?@C'G='=A'>
?'=?A F@C'B @G'A1' F@' =@%'=' F@' @CB=?'A1' F@'DCA @ AC%'F=B ?>'
=1@C'F '=CC B='?' A?EA?'A? ' F@' AE %'=?E'?A ' F@'DCAD@C '
A1' F@' =@%'=?E'F=B ?>' F@C@1AC@'?A'C >F' A'E DA @' A1' F@J %
' 'G='F@E' F='F@C@'G='?A'DCAA1' F='F@'DC A?@C'G='F@

' J ' C1) :' ,(/==7/*' #' W ' 9='1+=/'72<*:'3/'7 49 ''49/')' 'GA'
, ', >' , ' ' ' ,' 'Y.. 14'1'E(:'='H' '24 1/:' S:'"' .HA
" B /)' ' +(J/#'T'M' ' ' HAH

DCA @ AC' AB@C' F@' GAC<J@?%' A' @? @C' &@@< 'A?' =' D= F@@ ' F@' =JA ? ' E @' A' @= F' GAC<J=?' 1AC' F@' G@@<H 'G=>@ %' =?E' F=B ?>' DC@ @? @E' F ' IAA<' A' F@' = F @C%' =?E' F@' A = ' =JA ? ' E @' A' F@' @B@C= ' GAC<J@?' F=B ?>' I@@?' C@ <A?@E' D%' F@' GA E' AI = ?' F@' A = ' =JA ? '1CAJ' F@' = F @C' A' D= ' F@C@A ' F@' =JA ? 'E @' C@ D@ B@ ' A' F@' GAC<J@?' F@' DC A?@C%' ? @?E ?>' = ' F@' J@' A' E@1C= E' F ' J = @C%' 1= @ 'C@DC@ @? @E' A?' F@' D= F@@ ' F=' @ ' ' :N ' G= ' E @' A' =' @C = ?' GAC< D=?%' GF@C@= %' ?' C F%' =' J' A1' '9 ' G= ' E @' A' F J%' =?E' F=B ?>' AI = ?@E' F@' A = ' =JA ? '1AC' F@' G@@<' 1CAJ' F@' = F @C%' GF F' ? E@E' F' =C>@C' J%' 1C= E T @? ' =DDCADC = @E' F@' E 11@C@? @' A1' - ' :N_' A' F ' AG?' @' @ E%' F= ' F@' G= '> 'A1' =C @? 'A1' F@' - ' :N_' 1D 3

' 1*/(O' 792' 9+:' 49/' ; +'+)/ ; /'4' 2&' 49/' 1+=9' 12 'P 1/('=' 2&' 49/' "(2=/1<424=' +' :' 9+:' +<P 492(4#' 42')/4' 49/ ('9 **=' : =P 12<'4/ : ' +=' 211+= 2 '' (/P T< (/ : ' : =P 12<'4/ :' +' 3 **' +' :' +3=12 ' : / :' 7 49' 49/' ; 2 ' /#' /*:' 42' 3/' *+(1/ '#

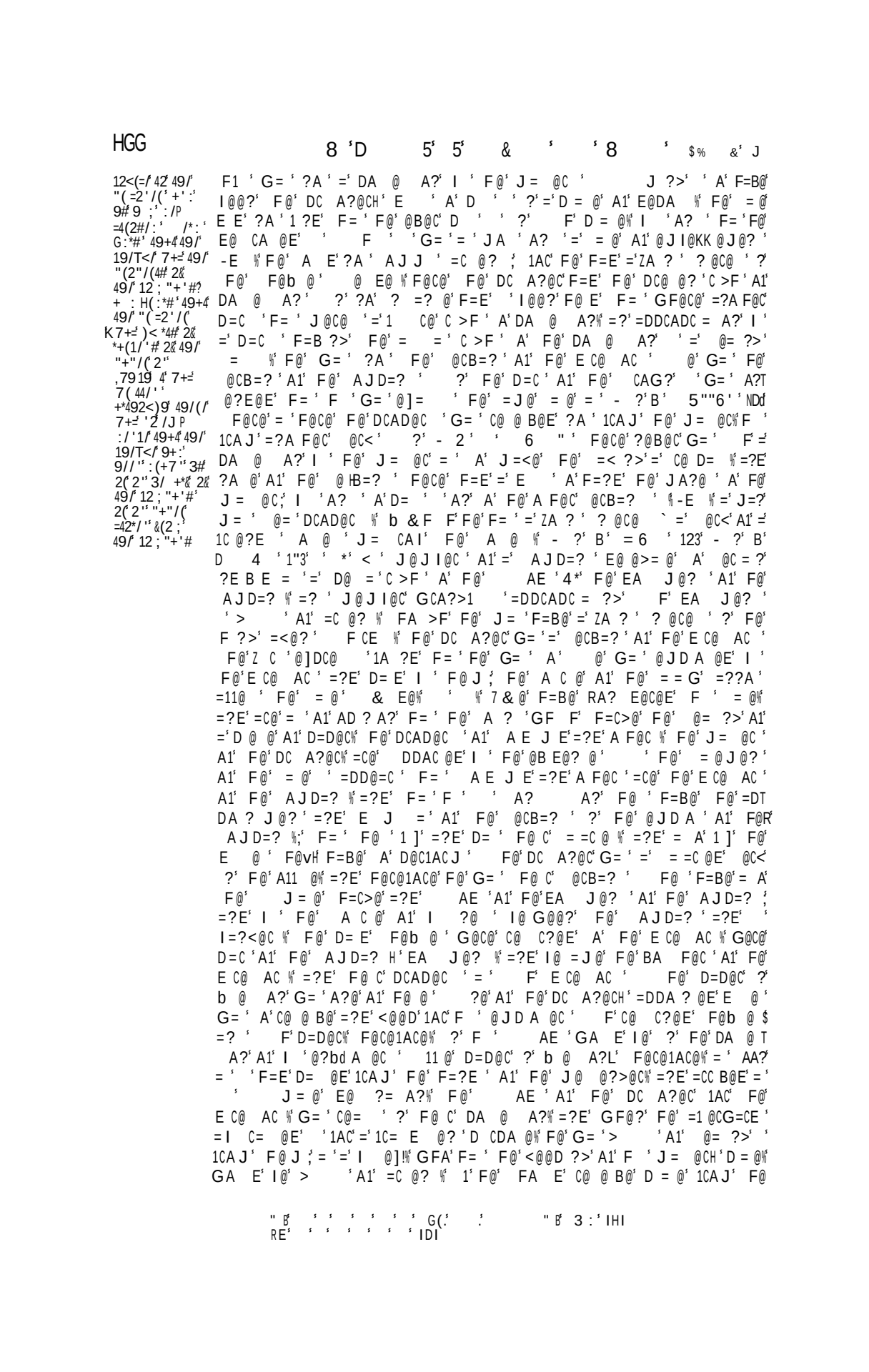
?' =' = @' I @1AC@' F@' =IAB@' ' F@' ?E J @? '=>= ? ' F@' DC A?@C' G= ' 1AC' @= ?>' =' I 'A1' @] F=?>@' 1AC' A?@' F ?EC@E' =?E' G@? GA' DA ?E ' G@ B@' F ?> %' F@' DCAD@C ' YA1' F@' DCA @ AC ;' ' =DD@=C@E' F= ' F@' DC A?@C' G= ' @C<' A' F@' DCA @ AC %' =?E' F=E' F@' A @' J =?=>@ J @? ' A1' F@ C' = F' A? @C? %' F= ' F@' C@ @ B@E' I ' =?E' J A?@ 'C@ J @E' A' F@ J %' AA<' I ' A' I@' E A ? @E' GF@?@B@C' F@' 1 J? @E' = F%' J=E@' D= J @? ' 1AC' 1C@ >F ' =?E' A F@C' F ?> 'A1' =' J =C' ?= C@%' =?E' @ @E' F@' I =? @' G F' F@' DCA @ AC ' = ' F@' @?E' A1' @B@C ' B@@<' ?' F@' : F' @D @ J I @C%' . 8%' F@' I ' ?' b @ A?' G= ' C@ J @E' A' F@' DCA @ AC %' I ' F@' DA %' GF@?' A?@' A1' F@ J AD@?@E' F@' @ @C%' =?E' >=B@' F@' I %' GF F' G= ' ?A ' E @' ' F@' . F' @D @ J I @C%' A' =' @C<' A' > @' ' = @D @E%' GF F' F@' @C<' = ACE ?> 'E E%' =?E' F@?' = E' ' =JA?> 'AZ @Z%' I 'A?' F@' E@ <' A1' F@' DCA @ AC ' ?' F@' F' @D @ J I @C' F@' DC A?@C' =CC @E' F@' I ' ?' b @ A?%' A>@ F@C' G F' =?A F@C' I %' A' F@' DCA @ AC %' I =?<@C %' GF@?' F@' I =?<@C %' @C<%' AI @CB ?>' F= ' ?@ F@C' A1' I @ J' ' G@C@' ? AC @E' I ' F@' DCA @ AC %' = <@E' F J' GF@ F@C' F@ 'G@C@' A' I @' @? @C@E' FAC @C' E A ? @E' ;' DA?' GF F'F@' = E' F= 'F@' G=? @E' J = ' ?A @ ' =?E' J A?@ ' 1AC' F@ J %' =?E' F= ' F@' J A?@ ' J 'I@' 1 ' G@ >F %' =?E' >AAE%' = ' 'G= '1AC' F@' D=C =C' @' A1' F@' DCA @ AC ' ?' F@' =J @' E= ' F@' =I A?E@E' G F' F@' J A? @ ' F@' F=E' = ' C@ ' @ B@E ' 'G= ' A? @?E@E%' A?' I @F= 1' A1' F@' DC A?@C%' F= ' F@' I ' F= ?>' AJ @' @>= ' ? A' F ' DA @ A?' <@' =? ' A F@C' I ' A1' F@' DCA @ AC ' AB@C' GF F' F@' F=E' =' E DA ?>' DAG@C%' I@' F=E' =' C >F ' A' C@ @ B@' F@' J A?@ ' 1AC' %' FA >F' ?A ' A' A?B@C ' F@' J A?@ %' GF@?' C@ @ B@E%' A' F ' AG?' @' ;' =?E' F= %' F@' 1 C ' =< ?>' A1' F@' I ' ?A ' I@ ?>' AC A %' F ' C@ @ B ?>' F@' J A?@ ' 1AC' ' =' F@' I=?<@C %' =?E' >A ?>' =G= ' G F' F@' J A?@ %' G= ' =' J @C@' IC@= F' A1' C %' =?E' ?A' 1@ A? ' ' @= F%' %' G= ' @=C ' A1' AD ? A?' F= ' F 'G= ' 1@ A? %' F@' I ' F=B ?>' I@@?' A? @' E@ E@E ' ?' F@' DA @ A?' A1' F@' DCA @T AC %' I ' F@' @C<%' GFA' >A ' ' = @D @E%' D ?>' ' =JA?> ' F@' A F@C' I ' A?' F@' DCA @ AC %' E@ <%' =?E' F@' DC A?@C' F=B ?>' 1@ AT ? A ' =<@?' ' =G= '1CAJ' F= ' DA @ A=' 1 3

'' <' '12(P "2(+4/ :' 12 ' ; P "+' '# 7+=' ; +'+)/ :' 3# : (/142(=' 792' +"'"2 '4/ :' "+ : ' +' :' : =P ; =/ :' 49/' =/(J+' '4=' +' :

' F@' ?E J @?' ?' AJ @' A ? ' F=C>@E' F@' DC A?@C' B F' @J I@KK @J @? %' =?E' ?' A F@C ' G F' @= ?>' =' D @ @' A1' D=D@C%' F@' DCAD@C ' A1' ' A E J E' =?E' A F@C %' F ' J = @C ' F@' DC A?@C' G= ' @J D A @E' = ' =' = =C @E' @C<' ?' F@' A11 @' A1' F@' AI@ ?T C=? @' AJ D=? %' =?E' F@' G= ' = A!=' F=C@FA E@C' ?' F@' A? @C? ' F@' =11= C ' A1' F@' AJ D=D %' GF F' G= ' =?' ? ? ACDAC= @E' AD=C ?@C F D%' G@C 1' J =?=>@E' I ' =' IAE ' A1' E C@ AC %' FA @?' A ' A1' F@' F=C@

FA E@C ' ; =?E = ' F@ J @ GF@? F@ A11@? @ G= ' AJ J @E
A E J E G= ' F= CJ =?' A1 F@ E C@ AC ' F@ E C@ AC ' =DDA ? @E E @ =?E
=?E E J @E @C< ' =?E A F@C @CB=? 1]@E F@ C = =C @ =?E
'F@ D=C =C E @ ' A I@ E F=C>@E I ' F@ J ' ; =?E F@ E C@ AC ' !A1 F@
F=E F@ F=C>@ =?E AE ' A1 = ' IAA< ' =?E D=D@C ' I@ A?> ?>' FAA<' =?E
A F@ AJD=? ' F@ = =C @ ' A1 F@ @C< ' G@C@ D= E A ' A1
F@ 1 ?E ' A1 F@ AJD=? ' F@ AJD=? ' F=E =' EC=G ?>' = A ?' C ' 3 @C@4
= ' F@ I=?<' A1 J ' , ' A '' =?E G@C@ ?' F@ F=I ' A1 @?E ?>' D=E A ' A1
F@ C D= IAA<' A?' @ E= ' ?' @B@C ' G@@<' A F@ GC @?' D =?E'
F@ C J@ @?>@C G@? ' A?' F@ 1A AG ?>' JAC? ?>' A IC ?>' ' I= <
GF@?' ' G= ' C@ CCZ@E A>@ F@C G F' F@ F@b @ ' =?E I ' D= E' ' @CB=?' A1
E C ?>' F@ DC @E ?>' G@@<' F@ DC A?@C G= ' F@ D@C A?' GFA @' ' ' 4 ' n''
E ' G= ' A C@ @ B@ F@ D= IAA<' =?E BA F@C ' 1CA J ' F@ J @ ' B=?' A1 F@
@?>@C =?E ' G= ' F ' E ' DA?' C@ @ B ?>' F@ J ' A AJD=C@ F@ EC@ AC
@? C @ ' ?' F@ D= IAA<' G F' F@ IAA<' A1 F@ AJD=? =?E A I=?<@C@''
DC@ @CB@ F@ BA F@C ' 1AC F@ @ A1 F@ AJD=? 1 G=? @E A?' GFA D=E F@ C
=? ' 1 C@ A = A?' ?' F@ - ' F A1 @IC =C F@ DC A?@C D= E' F@b @ =?E
? A F@ A?EA?' =?E & @ J ? @C =?<' 1AC F ' AG?' = A ?' C@ C?@E F@
GF F' F@ <@D ' F@C@ =' F@b @ 1AC : ' D CDAC ?>' A I@ D= E' F@b @ '
EC=G?' I ' F@ AI@ ? C=? @ AJD=? ' A?' D ,' A ' G= ' G F' F@ C
= F@E' I ' ?' ,' A NJdz A>@ F@C G F' A F@C F@b @ ' 1AC F@ =' @'>@C1'
ADEA?' =?E & @ J ? @C =?<@? @C@E A F@ E@I ' A1 F@ AI@ GFA G='1 ' H
? C=? @ AJD=? ' ?' F@ C D= IAA<' =?E E@ B@C@E A>@ F@C @JDA ' A
G F F@ IAA<' A?' F@ 1A AG ?>' & @E?@ E= ' A F@ J @ @?>@C A1 F@ =?E4 '+N1E@ 'H
AJD=? GFA E@ B@C@ '' F@ IAA<' =?E F@b @ A F@ DC A?@C ?' B@C@E F@ J'
F@ = ' G= ' ?' 7F@ : F A1 * =C F ?' A? @b @? @ A1 AJ @ A F@DC A?@C
D A?= ' @=C F 1AC F@ F@b @ 1AC : ' G= ' J =E@ E C ?>' F '
=I @? @ = JA?> ' F@ BA F@C ' ?' F ' <@@D ?>= =?E ' A E ?A ' I@ GFA @E ' '
1A ?E ' F@ D= IAA<' G= ' @] = J ?@E =?E F@C@ F@ @? C ' A1 F@ LI A @ V=J'
F@b @ 1AC : ' F=E' I@@?' @C= @E =?E F@ F@b @ G= ' ?@B@C IAA<' 1 F@
1A ?E ' F@C@ G= ' ?A @B E@? @ A FAG F= ' =? ' D@C A?' A?' I@F= 1 IAA<' A1 F@
A1 F@ AJD=? ' F=E @B@C EC=G?' F@ F@b @ ?' b @ A? AC F= ' AJD=? ' =?E
' F=E' I@@?' EC=G?' A?' D=D@C A @?' 1CA J ' F@ AJD=? 1 3 ' >' +@C= AC
G= ' A? @?E@E 1AC F@ DC A?@C F= ' @C@ G= ' ?A @B E@? @ A1 =? ' F@ 1 C@ @
DCAD@C ' ?' F@ D=C @ ' 1CA J ' GFA J ' F@ F@b @ G= ' = @>@E A A1 F@ AJ '
F=B@ I@@?' A @? @] @D ' = ' F=C@FA E@C =?E F= ' F@ DC A?@C D++@C'G= '=
I@ ?>' = A =' F=C@FA E@C A E ?A ' I@ ?E @E 1AC @= ?>' F@ =C@FA E@C ?
DCAD@C A1 GF F' F@ G= ' =' ZA ? ' AG?@C ' C@ G@ FA >F ' AJD=? '
F@ F=C>@ A1 @J I@KK @J @? ' 1= @E ; I ' G F' C@>=CE A F@ F=C>@
A1 @= ?>' =' D @ @ A1 D=D@C F@ A E F@ Z C ' F= ' 1 F@ =? @ @E DAC ?>' A I@
F@b @ G= ' C@ C?@E A F@ DC A?@C =?E F@ C@ @ B@E ' ?' F@ EC=G?' F ' F@
= ' J =??@C A I@ <@D ' I ' F J ' 1AC F@ @ A1 F@ E C@ AC =?E F CA+ ' I=?<'
=1 @CG=CE ' =I C= @E AC E@ CA @E F@ ' FA E 1 ?E F J ' > ; @C@ =?E F '
F@ Z C ' 1A ?E F J ' > ' A1 @= ?>' =' D @ @ A1 =' D=D@C ; =?E F@b @ F=B ?>'
DA?' =' = @ C@ @CB@E DA?' F@ b @ A?' GF@ F@C F ' E C@ A?' +I=+@C HA
G= ' C >F ' G= ' A? @?E@E F= ' 1 F@C@ G= ' =? ' A11@? @ F@ AJD=? '
DCAB@E ' G= ' @J I@KK @J @? ' =?E ?A ' =C @? ' 2 ' B ' 6 " ' N d + C=@E4+X
F@ DC A?@C ' E ' G= ' J @C@ ' A <@@D F@ F@b @ ?' F ' AG?' F@+@ @?> C
DA @ A? =?E A DCAE @ ' GF@?' = @E DA?' I ' F ' J = @C ; =?E ? F@ =

" B 9/ 72(:- 3/47 / / '' 3(+10/4- +(/ 0 9/(/ 7/(/ ; == ')'"+)/- ''49/ 19/T</
&(2 ;')' 2V' ' ' HHE' 3220' 3<4 '2' /J :/ '1/ 49+4 49 - 19/T</
" B % ' 49/ +()< ; / ' 4 49/ 442(' /#' 1+ ; / &(2 ;' 49/ ; == ')' "+)/= $ [
! / ' /(+# =+ : ' 0 4 7+- 2 '' 49/ "+ _/(2& 49/ W2B ' / ' ' M ' M ' HHG
! *23/ 19/T</ 3220 $ *: /(=2<'
J2 ' ' (



' 3+ '0/(S= 1*/(0' &+*=/*# '&2(; / :' +' 1<=42 ; /(' 2& 49/' 92<=/' 49+4' 9/' 0+ :' "+ :' '' ; 2 ' /# 42' 9 =' 1(/ : 4' + ' :' 49/(/3# 'Þ :<1/ :' 49/' 1<=42 ; /(' 42') J/' 9 ; +' 19/T</' &2(' 49/' + ; 2<' 4' + ' :' (/1/ J/ :' 49/' ; 2 ' /#? + ' :' 49/ "(/J/ ' 4 +' : =12J/(#' ; +: /' & 14 4 2<=' / ' 4(/=' '' 49/' 3220=' 9 =' 7+=' 92* : / '' 42' 3/' *+(1/ ' #' 49/' 19/T</' 3/ ')' : (+7 '' 3#' 49/' 1<=Þ 42 ; /(' '2& 42' "*/ :) /' 9 =' 27 '' 1(/ : 4' 2(' 42' : (+7' 2<4 ; 2 ' /# 2& 9 =' 27 ' ' 3<4' 42' : (+7' 2<4' 49/' ; 2 ' /# =2' &+*=/*# "(/P 4/ ' : / :' 3# 43/' "(=2 ' /(' 42' 9+J/' 3// '' "+ :' '' 3# 9 ;

' F@' DC A?@C' G= ' ?E @E' 1AC' @= ?>' GA' I =?<' ?A @ ' A1' 1 1 ' DA ?E ' @= F%' ?' F@' EG@ ?> FA @' A1' F@' DCA @ AC ' I@' DC A?@C' G= ' =' @C<' ?' F@' I =?< ?> FA @' A1' F@' DCA @ AC %' =?E' G= ' ? J = @' G F' =' >@? @ J =?' ?= J @E' 3 = @%' GFA J ' F@' F=E' ?E @E' A' AD@?' F ' = F' = A ? ' = ' F@' FA @' ?' F@' F' #@ @ J I@C% 9 %' F@' J =E@' =' 1 A ' @? C ' ?' F@' I =?< ?>' IAA<' A1' * C ' 3= @% A' F ' C@E %' 1AC' GA' F ?EC@E' DA ?E %' GF F' J ' F@' A E' * C ' 3= @ F= ' F@' F=E' F= ' J AC? ?>' D= E' ?' A?' * C ' 3= H ' = A ? ' ?' F@' I@ @1' F= ' F ' 1= @' @? C ' =?E' 1= @' = @C A?' G@C@' C @%' * C ' 3= @% A?' F@' F' =? =C %' 9 -%' >=B@' F J ' =' F@b @' A?' F@' DCA @ AC %' E= @E%' I ' F@' DC A?@CH ' E@ C@%' A?' F@' E= ' I@1AC@%' 1AC' A?@' F ?EC@E' DA ?E ;' 1AC' D= J @? ' A1' GF F' F@' DC A?@C%' ?E@C' A A C' A1' @ B ' ?>' = ' F@' A ? @C%' AA<' A ' A1' F@' DCA @ AC H I =?< ?A @' EC=G@C% ?' F@' FAD%' F@' GA' ?A @ ' = @E' ?' F@' ?E J @? %' E@DA ?>' F@' F@b @' = J A?>' F@' A F@C' D= E' F@b @ ' A1' F@' E= %' =?E' J =< ?>' ?' F@' G= @ I AA<' =?' @? C ' A1' F' D= J @? %' ' F ' A? C B=? @' =?E' A F@C' DC@B A ' DC= @ ' A1' F@' <@' < ?E4' * C ' 3 = @H ' C@= ' I = =? @% G= ' C?@E' =>= ? ' F J' A' F@' = J A ? ' A1' @B@C= ' F ?EC@E' DA ?E ;' =?E' ?' ACE@C' A' DC@B@? ' F@' E A B@C ' GF F' J ' F=B@' J J@T E = @ ' @? @E' 1' F@' = A ? ' F=E' I @@?' 11@C@E' A' A? ? @' ?' F ' = @%' F@' DC A?@C' J =E@' A F@C' 1= @' "! ' 4' < ' C@E ' A1' * C ' 3 = @;' ?' F@' @E>@C' A1' F@' FA @' F@' Z C ' 1A ?E' F@' DC A?@C' > %' 1>3' =?E' F= ' = ' F@' J @' F@' J =E@' F@' 1= @' @? C @ ' ?' F@' @E>@C%' =?E' ?' F@' A J @CH ' IAA<%' F @ ' E E' ' 1C= E @? %' G F' F@' E@ >?' A1' @?=I ?>' F J @ 1' A' ' ' F@' J A?@ ' A1' F@' DCA @ AC ' ?E%' A?' =' = @' C@ @CB@E' A?' F@' b @ A?' GF@ F@C' F@' A11@? @' G= ' =' 1@ A? %' AC' = J A ? @E' A? ' A' =' 1C= E%' F@' Z E>@ ' F@ E' F= ' F@' =< ?>' G= ' 1@ A? A %' =?E' F= ' F@' E@DA ?>' F@' F@b @' G= ' ?A ' ? @?E@E' A' D @E>@' 3 = @H ' @ C %' I ' A' DC@B@? ' E@ @ A?%' = ' 3 = @' E E' ?A ' > B@' F@' F@b @' A' D @E>@' F ' AG?' C@E %' AC' A' @?=I @' F@' DC A?@C' A' >@ ' =G= ' N= ' F@' DDA @Ed' J A?@ ' A1' F ' AG?' ?E' CA @%' %' ?' E@ B@C ?>' F@ C' AD ? A?%' = E% F@' C @' J @=? ?>' A1' =C @? ' ' F@' 1@ A? A ' =< ?>' F@' DCAD@C ' A1' =?A F@C' G FA ' F ' A? @? %' =?E' =>= ? ' F ' G %' G F' ? @? ' A' A?B@C ' ' A' F@' @' A1' F@' =<@C%' 1 3' F@' 1= ' A1' F@' = @' =? G@C' @B@C ' D=C ' A1' F ' E@1 ? A?' F@' =< ?>' A1' F@' DCAD@C ' ' @=C%' =?E' F= ' ' G= ' =<@?' =>= ? ' F@' G ' A1' F@' AG?@C%' =?E' ?E F' =' 1@ A? A ' ? @? %' ' @b = ' @=C%' 1CA J ' F@' C J =? @' A1' F@' DC A?@CH ' F=B ?>' 1C= E @? ' J =E@' F@ @'*6C ' "! ' G F' =' B @G' A' A? @=' F@' J @=? ' F@' F=E' =C 1 ' J =E@' @' A1' A' A I = ?' HNGd

9+4' =<" "2= 4 2 '' ; //4= +*' 49/' &+14= 2& 49 =' 1+=/ $ ==< ; ')' 49/' &2( ) /(# 42' 9+J/' 3// '' 26' ; 44/ :' <" 2 '' "+" /(' 3/*2 ') ')' 42' 49/' : (/142(=' 2& 79 19' 49/(/' 7 +=' =2 ; /' /J : /' 1/ ' 49/' "(2" /(4# '' 49/' "+" /(' 72<*:' 9+J/' I@@?' +*# +*2 ')' '' 49/' : (/142(=' ?+=' 49/' &(+<: <*/ ' 4' <=/' 2& 49/' "+" /(' 3# 49/' "(=2 ' /(' 72<*:' ' 24' 9+J/' +*4/(/ :' 49/' "(2" /(4# +' :' 49/' ( ) 94=' 2& /==(=' ! *# '' 72<*:' ' 24' 9+J/' 3// '' : &&/(/ ' 4' A?' 49 =' =<" "2= 4 2 '' &(2 ;' 79+4' 49/' # 72<*:' 9+J/' 3// '' &' 49/' 19/T</' 9+:' 3// '') / ' < ' / ' <4' =<" "2= ')' 49/' 19/T</' 42' 9+J/' 3// '' &2( ) / :' 2 '' "+" /(' ' 24' 3/*2 ') ')' 42' 49/' "(2=/1<42(=' 79/ '' /==(=' ! *# ' ' "+ :' 49/' 19/T</' 49/# _+ :' 4' +=' +) / ' 4=' &2(' 49/' : (/142(=' +' :' 4' ; +# 7 /*# 3/' <( ) / :' 49+4 49/# "<(19+=/ :' 49/' "+" /(' 2 '' 3/9+*& 2& 49/' : (/142(=' ' ' ! " 8' 9/' 6<(# =+ :' 49+4' +=' 49/' "(=2' /(9+:' 49/' 19/T</' 9/' 9+ :' +' ( ) 94' 42' "+# 9 ; =/ *& ? 3<4' +#* /# ' ' 3/&2(/' 792 ;' 49/ -"(=2 ' /(' 7+=' 4(/ :' 42*:' 49/ ;' 49+4' 49 =' 7+=' ; +44/(' 2& *+ ' 9/ (' 2" ' 2 ' ' 927P /J/(' 7+=' =4+4/ :' ' ' 49/' 1+=/' ' 9#/#' "&8' J :' "' .GA' "N8' +; ; 2<=' 1+=/' G /+19' .ME' ' ')' +<' 4' EM I ' ' +#*/# ' +' :' ' ' ' GG. ' +7 (/ '1/ ' ' 792' 7+=' +3=/ ' 4' :2<34/ :

' @' = @ ' YGF F' F=B@' I@@?' ?AG' @E%' F@' J =] J' A1' F@' *:' (<*f +=' 42'
AJ JA?' =G%' = C@=E ' J@? A?@E%' C@ = ?>' A' F@' 1C= E @?' A?T "(2"'/(4# '2f
B@C A?' I ' =' @CB=?' A' F ' A!G?' @' A1' F@' >AAE ' A1' F ' J = @C%' 3/ ')' =<&& P
=DD@=C ' A' I@' 11 @? ' @]D = ?@E' =?E' @ =I F@E ' ' FA E' 1/ J/ :' '42' 49f
I@' AI @CB@E' F= ' ?' = ' F@ @' = @ ' 'G= ' A? E@C@E' F= ' F@' DCAT ;' +=4/(S' "2=P
D@C ' A @?' G= ' 11 @? ' C@ @ B@E' ? A' F@' DA @ A?' A1' F@' =/== 2'' 79/(/f
J = @C' I@1AC@' F@' =< ?>' I ' F@' @CB=? ' ?E' F ' @=E ' A' F@' 4' 7+=' ; /(/*#
A? E@C= A?' A1' =' J = @C =IE ? A?' C@ D@ ?>' F@' DA @ A?' A1' : /* J/(/ :' '42'
F@' J = @C%' ?=J @ %' F= ' F@' DCAD@C ' G= ' ?A ' A? E@C@E' = ' 49/f =/(J+ '4 &2('
11 @? ' C@ @ B@E' ? A' F ' DA @ A?%' GF@C@' ' F=E' J@C@ ' <=/
I@@?' E@ B@C@E' AH F@' @CB=? ' 1AC' F@' J = @CH' @' DA?' GF F'
IZ@ ' 'G= 'G@ ' = E' EAG?' F= ' 7 1' F@' @CB=? ' F=B@' EA?@' ?A' = '
A' E@ @CJ ?@' F ' AC > ?= %' =G1 %' =?E' @] B@' DA @ A?%' = ' I '
E@DA ?>' F@' >AAE ' ?' F ' J = @C! ' FA @%' AC' F@' <@%' = FA >F' A'
J =? ' D CDA @ %' =?E' = ' =>= ? ' F CE' D@C A? %' F ' ' ?' =G' ='
C@ @ D ' A1' F@' >AAE ' I ' F@' J = @C%' @ ' ' F= ' I@@?' C @E' A F@CT
G @' ?' C@ D@ ' A1' F@' @CB=? ' F J @ 1%' DAD' =' F=C>@' A1' =C @? ' = '
AJ JA?' =G%' ?' A?B@C ?>' F' >AAE ' A' F ' AG?' @ !HN=;d
DA?' F ' DC ? D @%' ?' =' = @' DC AC' A' F@' 8' @A ' ' %' ' '
GF@C@' ' =DD@=C@E' DA?' =?' ?E J@?' 1AC' @= ?>' = ' ?E ='
IA?E %' F@' DCAD@C ' A1' F@' >AB@C?AC' =?E' AJD=? ' A1' F@' =?<' A1'
?> =?E%' F= ' F@' IA?E ' ?' b @ A?%' F=B ?>' I@@?' =<@?' A' F@'
I=?<' 1AC' F@' D CDA @' A1' I@ ?>' E@DA @E' F@C@%' G!@C@' ?A ' =CC @E' A'
F@' = 'D = @' 1AC' F' E@DA %' ?=J @ %' =' F@ ' ?' F@' @ =C' A1'
F@' I=?<%' I ' G@C@']@ @ B@E' I ' F@' DC A?@C%' GFA' G= ' =' = F @C'
F@C@%' =?E' D = @E' I ' F J' ?' F ' AG?' E@ <%' ' G= ' C @E' F= ' F@'
DC A?@C' G= ' ?A ' > ' A1' =C @? ' ?' =1 @CG=CE ' @ ?>' F@' IA?E %'
=?E' D ?>' F@' JA?@ ' ? A' F ' AGJ' DA <@ ' ?E' F@' >CA ?E' A1'
F@' E@ A?' =DD@=C ' A' F=B@' I@@?' F= ' = ' F@' IA?E ' G@C@' ?@B@C' D '
? A' F@' @ =C' ?' F@' = ' A C @%' F@' >AB@C?AC' =?E' AJD=? ' A1'
F@' I=?<' F=E' ?A' DA @ A?' A1' F@J %' I ' F@' DA @ A?' C@J = ?@E'
= G= ' ?' F@' DC A?@C%' 1'3
?' =?A F@C' = @' &F@C@' F@' DC A?@C' G= ' ?E @E' 1AC' @= ?>' ='
F= 1 CA G?' =?E' FC@@' F ?> %' F@' DCAD@C ' A1' F ' J = @C%' F@'
=J@' DC ? D @' G= 'C@ A>? K@E ' F@' J = @C' A1' F@' DC A?@C' G= '
=' A?1@ A?@C';' =?E' F@' DC A?@C' G= ' F ' @CB=? %' @JD A @E' A'
= @?E' F@' FAD' F@' J = @C%' F=B ?>' AJ@' D A?' F= ' F@' DC T
A?@C' F=E' A = A?= 'D C A ?@E' F@' JA?@ 'D= E' I 'D@C A? 'E@= ?>'
= ' F@' FAD%' DCA C@E' =' AJ@C' A' AJ@' F@C@' A?' DC@ @? @' A1' I T
?>' AJ@ F ?>%' F=B ?>' DC@B A '> B@?' A' JF' AJ@C' AJ@'
J =C<@E' B@C' A1' F 'AG?' F@' AJ@C' = ACE ?> ' =J@' A' F@'
FAD' ?' F@' =I @? @' A1' F@' J = @C%' =?E' IA >F ' AJ@' =C @ ' A1'
F@' DC A?@C%' D= ?>' 1AC' F@J ' G F' F@' J =C<@E' B@C ' AA?'
=1 @CG=CE ' F@' J = @C' = J@' ?' =?E' @]= ? F@E' F@' %' ?' GF F'
F@' DC A?@C' A >F ' A' F=B@' E@DA @E' F@' B@C' RF@?' ' G= '
C@ @ B@E';' =?E' 1 ?E ?>' A? ' AJ@' A1' F@' J =C<@E' B@C' F@C@%' F@'
DCA C@E' F@' DC A?@C' A' I@' J J@E = @ '=DDC@F@?E@E' =?E' @=C F@E%'
GF@?' F@' C@ 'A1' F@' J =C<@E' JA?@ 'G= '1A ?E' DA?' F J ' F@'
Z C ' 1A ?E' F@' DC A?@C' > ;' I %' DA?' =' = @' C@ @CB@E%' F@

"O8' G' +=4' ' +' 1' .Y' =' .Y' "' AYE 49/f 3+'O 79/(/2'' 49/#' ;)9¢' ; + '4+ ''
W##0' + 4/S' 1+=/' .' /+19' GE' G' +=4' +' 1 J * +14 2'' #/¢' 49/(/' 7+=' ') /+¢'
' ' 1' .Y' =' .D' "' ADM' +(4/(' +' :' : &&/(/ '1/' 3/47/ / '' =<19' +' "2==/== 2'' +' :'
/ ' ' =2' ' ' /' ' =2' ' ' =+ : ' 49+¢' +' "2==/== 2'' 79/(/2'' 42' &2<' :' +' 1(; '+*
492<)9' 49 =' ;)9¢' 3/'=<19'+' "2==/== 2'' ' "(2=/1<4 2'

E>@ ' G@C@' A1' AD ? A?' F= ' F@' DC A?@C' G= ' ?A ' > ' A1' =C @? %
I ' A? ' A1' =' IC@= F' A1' C ;' F@' JA? ' ?@B@C' F=B ?>' I@@?' D '
? A' F@' %' =?E%' F@C@1AC@%' ?A ' F=B ?>' I@@?' ?' F@' DA @ A?' A1'
F@' J = @C%' = ' =>= ? ' F@' DC A?@C% 183

'+14 ; / '4=
&2(" "(24/14 ')'
; +=4/(=' &(2 ;'
49/' / ; 3/aa*/P
; / '4=2&49/ ('
1*/(9=+' :'
=/(J+'4=

' =/(J+'4
9+J ')' +'3+P
*+'1/' ''9 =
9+' :' (/1/ J/ :'
+'19/T</
79 19' 9/'
1+=9/ :' +' :'
32<)94')22 :=
2'' 1(/ : 4' +' :'
/ '4/(/ :' 49/ ;'
+=' "+ :' &2(?
+' :' 9/' 7+=
9/*:' '24')< *4#
2&*+(1/'#

' A? @b @? @' A1' =' E@ A?' DA?' F ' IZ@ %' 163' F@ ' @A' %
' %G = ' D= @E%' =?E' ?AG' F@' - :' , ' 3 @ ' ' %' ' 9%' DCAB E@ '
1AC' F@' D ? F J @? ' A1' F' @ J I@KK @ J @? %' = ' 1@ A? @ %' =?E' G ' I@'
A? E@C@E' ?' F@' @@E ?>' F=D @C ' R 4

' A ? ' F=C>@E' F@' DC A?@C' G ' @ J I@KK ?>' G@? ' F ?> %'
=?E' ' =DD@=C@E' F= ' F@' DC A?@C' G= ' =' @C<' A1' F@' DCA @ AC%'
=?E' F ' I ?@ ' G= ' A' = @?E' @C = ?' J =C<@ ' 1AC' F@' D CDA @' A1'
I ?>' < ? ' =?E' A F@C' F ?> ' 1AC' F ' J = @C%' 1AC' GF F' ' G= ' FG'
E ' A' D=ZC' C@=E ' J A?@ ' @1AC@' >A ?>' A' J =C<@ %' F@' DCA @ AC'
G= ' J ' F@' F=I ' A1' > B ?>' F@' DC A?@C' @ F@C' J A?@ ' AC' =' F@b @'
A?' F ' I=?<@C ' A' E@1C= ' F@' @]D@? @ ' A1' F@' E= %' =?E' ' G= ' F@'
DC A?@CH ' E ' @ F@C' A' E@ B@C' GF= ' >AAE ' F@' F=E' D C F= @E%'
AC' A' = A ? ' 1AC' F@' & 4 '' 4' C@ @ B@E' F@' = J @' @B@? ?>'
AC' F@' ?@] ' & 4" ! 2 ' ! ' =' IAA<' <@D ' 1AC' F= ' D CDA @ ' ?' F@'
9 F' A1' AI@C%' + ' < ' DC A?@C' F=B ?>' =?' =E J @E' I= =? @' A1'
= F' I@ A?> ?>' A' F@' DCA @ AC' ?' F ' F=?E ' A1' ' ' # '
C@ @ B@E' =' F@b @' 1AC' H ' 1CA J ' F@' DCA @ AC' A' @] D@?E' ?' F@'
A C @' A1' F ' @ J D A J @? %' GF F' F@b @' G= ' = F@E' : '' F@' DC T
A?@C ' F@' DC A?@C' @? @C@E' ?' F ' IAA<%

7 (F=CE%' 8' F@@D%' : ' ' = P
=?E' E@ I @E' F@' DCA @ AC' G F' F ' D= ?@%?' A' (F=CE%' =?E'
G F' @B@C=' A F@C' J ' D= E' A' E 11@C@?' I F@C %' = J A ? ?>' A'
9 ' 9 ' R# ;' F@' F=E' ?A %' FAG@B@C%' D= E' (F=CE' =? ' J A?@ %' I '
F=E' =>C@@E' A' D= ' F J ' 1AC' F@' < ? ' = ' F@' @?E' A1' F@' b =C @C%' NId'
?' A? @b @? @' A1' F@' DC A?@C' I@ ?>' I= <' ?' F ' = A ? %' F@' G= '
A%'C@ @ B@' ?A' = =C ' 1CA J ' F@' DC@B A ' =E E= ' ' G= ' AIZ@ @E'
F= ' F@' = @' ?@ F@C' = J A ? @E' A' @ J I@KK @ J @? ' ?AC' =C @? ;'
I ' F@' @ A? ' F@ E' F= ' ' = J A ? @E' A' =C @? %' =?E%'
?E@C' F@ C' E C@ A?%' F@' Z C ' 1A ?E' F@' DC A?@C' > ' A1' =C @? '
= ' =' @CB=? %' I ' ?A ' A1' @ J I@KK @ J @? ;' =?E%' DA?' =' = @' H@ @CB@E'
F@' A?B A?' G= ' F@ E' GCA?>%' N d' A' GF@C@' A?' =?' ?E J @? '
1AC' =C @? ' = ' =' @CB=? %' ' =DD@=C@E' F= ' F@' DC A?@C' G= ' I= 11

"VB' <**S=1+=/' /+49 S ' M ' ' +' '1+=9/ :' +' :' 49/(/' 7+=' '2' /J : / '1/' 49+4'
.DND' ? *' /(4+' .DND' 1 4/ :' '' +a/' + '#"+(4'2&49/' 3+*+'1/' '' 9 =' 9+' :=' 9+:'
*/#S=1+=/' G' /=2**' E.. ' ' +=4' ' ' /J/(' 3// '' ; 2 ' /#' '' 49/' 9+' :=' 2&49/'
1' .Y' =' .D?' "' ADG "(2=/1<42(' 27 ' 49/' ; +() '+*' '24/' =
"\B' +a/*/#S=' 1+=/' G' /+19' EHA' ' 0 9/' /J : / '1/' =9/7/ :' 49+4' 49/' "(=2' /(
+=4' L' ' 1' .Y' =' .D' "' AD. ' /'+*=2' (/1/ J/ :' +4' : &&/(/ '4 4 ; /=' =/J/(+'
/V' J' '**/ '=' ' ' ' ' ' .GN' ' 5' &(2' 4 49/' "(2=/1<42(' &2(' 49/' "<(' '
+' :' /V' &' +7 4 ' ' D' ' ' ' GE. ' "2=/' 2&' "<(19+= ')' =0 ' =' 9/' "(=2' /(
, "' ' ' ' ( )94' ' ' ' ' 234+ ' / :' 49/' =0 ' =' 2 '' 1(/ : 4' +' :' +"" * / :'
IH.' ? ' /44=' /**' ' ' NM' ? ' &' ' 5' 42' 9 =' 27 '' <=/ $ 2' ? 9/*:'
(+10/44')' 2V' ' ' G) 49+4' 49/' 12' J 14 2 '' &2(' *+(1/ '# 7+=' 7(2')'
"p& 72' "(/1 =/*# = ; *+(' 4(+' =+14 2' =' 9 =' =' +' 1*/+(' ; =4+4/ ; / '4' 2&49/' &+14=?
K79 19' &2(; /:' 49/' =<36/14' 2&' 4 72' 249/(' +' :' &' 49/' &+14=' 7/(/' +=' =4+4/ :' '' 49/'
12<' 4=' 4220' "*+1/' 3 '' 49/' . E49' +' :' GM49' ; +() '+*' '24/' 4' =' 1*/+(' 49+4' 49/' 1+=/'
2&' 1423/(72<*:' 9+J/' 3// '' *+(1/ '# ?' '2(' ; <=4' 4' 3/'
"B /) ' ' ! 22 : /92<)9' /+(=' ' ' +==< ; /:' 49+4' 49/' 1+=/' + ; 2<' 4/:' 42' / ; P
G.M' 9/(/' K7+=' '3' +() < ; / '4' +' :' '2' 3/aa*/ ; / '4' ?' &2(' 49/' 2<(4' 1+ ; /' 42' '2
)(2<' :' =4+4/ :' &2(' 493' : /1 = 2 '' ?' 3<4' 49/' : /1 = 2 '' =' 1*/+(*#' ( )94?' &2(' 49/' 2 '*#' : /1 = 2 '' =' 2 '' ?' 3<4' 49/' =92<*:'
/J : / '1^ +)+ '=4' 49/' "(=2' /(' 7+=' +' &+*=/' /J : / '1/' 42' "(2J/' 79+4' ; 2 ' /#' 49/' "(=2' /(' =/ / ; ' 49+4' 49/' 1+=/' &+ */ :' 324' +=' 42' / ; P
/ '4(#' +' :' 49/' 2 '*#' 49 ')' (/1/ J/ :' &(2 ;' 3/aa*/ ; / '4' +' :' *+(1/ '#' &2(' +'4' 2&/ J P
49/' "(2=/1<42(' 2'' 49/' 2/1+= 2 '' ' T</=P : / '1/' 42' "(2=' /(' ; =+"" (2" (+4/ :' =?E' GF@? @' F@' C@ @ B@E'
4 2' ' 7+=' +' 19/T</' +' :' 49+4' 9+:' 3// ' 4' ' +' !

A F@ DCA @ AC =?E G= F E A C@ @ B@ =?E J =<@ D= T
J @? A?' F I@F= 1 =?E =?' = A ? 'A1 F@ @'C@ @ D =?E D= J @? '
G= '<@D ' ?' =' IAA<' ?' F@' DC A?@CH ' AE GF F' G= '@]=J ?@E'
I ' F@' DCA @ AC' = ' ? @CB= =?E' ?' F ' IAA<' G@C@' @B@C= '
@? C @ 'A1' D= J @? ' J =E@' A' GAC< J @?' ?' F@' @ J D A 'A1' F@' DCA @T
AC 1 B@' A1' GF F' G@C@' DCAB@E' A' I@' : '=?E' GA' A F@C ' ' I#'
J AC@' F=?' F=E' ?' 1= 'I@@?' D= E;=?E DA?'@]=J ? ?>' F@'= A ?
'=DD@=C@E' F= ' F@ @' G= ' ' I= =? @' A1' - ' E @' A' F@' DC A?@C
GF F' F@' DCA @ AC' D= E' F J ' 'G= 'AIZ@ @E F= ' F@' A1@? @'
G= '?@ F@C' =C @? '?AC' @J I@KK @J @? ;' F@' @ A? FAG@B@C F@ E'
F= ' F@' E@E A?A1' F@' @B@C= ' J 'A1' : '=?E' ' '=JA ? @E'
A' =C @? ';' I DA?' =' = @' C@ @CB@E 'G= ' C>@E' F= ' F@C@' G= '
?A' @B E@? @' F= ' F@' DC A?@C' C@ @ B@E' =? ' J A?@ '1CA J 'F ' J = @C'
@] @D ' F@' ' * = u 7 AC' = >F ' F= ' =DD@=C F@' D= J @? '
J = '= 'F=B@' I@@?' A 'A1!F ' AG?' J A?@ & >F J =?7 F@'
@B E@? @' F= 'F@' @? @C@E F@' J A?@ '= ' D= E' GF F' F@' F=E' ?A '
D= E @CB ' 7}?E' F= 'F@' E E' A'1AC' F@' D CDA @' A1' A I = ?T
?>' F@C@ I '=' DAC A?' A1' F@' J' A1' ' & @' =C@' = ' A1' AD ? A?'
F= ' F@' A11@? @' A1' GF F' F@' DC A?@C' G= '> 'G= '?A ' =C @? F
GF= @B@C' @ @' ' J = 'F=B@' I@@? 1#3

DA?' =?' ?E J @? '1AC' =C @? ' =DD@=C@E' F= ' F@' DC A?@C L+*=/' /'4(/=
I@ ?>' ?' F@' @J D A 'A1' F@' DCA @ AC F=E' I@@?' 1CA J' J @' A' '' +'' +112<'4
J @' @? C @E' I ' F@ J 'G F' J A?@ '1AC' F@' D CDA @' A1' D= ?>' F@' 3220' '24 : /P
G=>@ ' A1' F@ C' GAC< D@AD @ =?E' ' G= ' F ' E ' A' <@@D' =?' * J/(/ :' 42' 49/'
= A ?' ?' =' IAA<' A1' 1F@' J A?@ ' GF F' F@' A' E I C @E' F ; +=4/(
IAA<' G= 'DCAE @E' = ' F@' C = =?E' 'G= ' DCAB@E' A' A? = ?' FC@@'
@? C @ ' J =E@' I ' F@' DC A?@C ?' @= F' A1' GF F' F@' F=E' F=C>@E'
F '@J D A @C 'G F' J AC@' J A?@ ' F=?' F@' F=E' D= E' A?' F@ C' = A ?
F@' IAA<' F=E' I@@?' I= =? @E' I ' F@' DC A?@C;' I ' F@C@' G= ' ?A'
@B E@? @' F= ' F@' F=E' = = ' = A ? @E' G F' F ' @J D A @C
& >F J =? ADD@E' F@' = @ ' 7 F@' b @ A?' F@C@' E E' F@'
DC A?@C' ?' 1= 'E@ B@C' F '= A ?' A' F ' @J D A @C 'V C @' ' '
F= ' F@C@' =C@' @C = ?' @? C @ J =E@' I ' F@' DC A?@C GF F' Cu'
? ACC@ ;' I ' F@ '=C@' @? C @ 'GF F' D@CF=D ' F@' ?@B@C' ? @?E@E'
A' E@ B@C AC 1' F@' E E' E@ B@C' F@J A' E@ B@C' F@J' G F' @]T
D =?= A? ' ' F ' G= ' ?A' = A ? ?>;' =?E' F@C@' J ' ?'
F ' = @' F=B@' I@@?' =?' = A ? ?>' ?' ACE@C' A' 1]' F@' DC A?@C'
G F' =C @? N@d

?' =?' ?E J @?' 1AC' =C @? ' A1' E B@C ' b =? @ ' A1' =C?' J :/ '1/'
=>= ? ' F@' DC A?@C' =?E' ' =DD@=C@E' F= ' ' G= ' 1AC@ J =?' =>= ? ' =' D@C'
A1' F@' DCA @ AC GFA' G= ' =' =?B= ' J =? 1= C@C =?E' ' F=E'
?A' = FAC ' A' @ ' =? ' =C?' I ' A? ' A' > B@' ' A ' 1AC' F@' &/(J+'4' 49+4
D CDA @' A1' I@ ?>' GAC<@E' D' ? A' =?B= ' = ' F@' J =? 1= AC 49/'=/(J+'4
F@ ' DC A?@C' F=E' A?' GA' A = A? ' @? ' F ' @CB=? ' A' F@' 9+:' '2+<492P
DCA @ ACH ' G=C@FA @' 1AC' = J ' =?E' A?' F@' 1AC J @C' A1' F@ @' (4# 42' =/** 4 */')22:=
A = A? ' ' F=E' E@ B@C@E' G F' F@' =C?' =?' ?BA @' J =E@' A '
?' F@' DCA @ ACH ' ?= J @ ' ?' F@' = @C' A = A?' F@' DC A?@C'
@? ' GA' A1' F ' J @?' A' >@ ' =C?' =?E' F@ ' 1A ?E' F@' DC A?@C'
=?E' ' = ' F@' G=C@FA @' =?E' F@ ' =CC @E' =G= ' ?' F@' DC@T
@? @' A1' F@' DC A?@C' =?E' @C = ?' D=C @ 'A1' =C?' GF F' G@C@'
DA ? @E' A ' A' F@ J ' = ' F@' = J ' F@ 'G@C@' A' =<@' A' F@' DC '

W -H /) ' ' ! (//' ' /+(=' ' 'HGH' K 419/**$= 1+=/' .' ^ ' W '
9/' "(=2' /(' ;)94'9+J/' 3//'' ' : 14/ :'&2(W1H /) '40' <4*/(' G ' ' ' 8
234+ ' ')'49/' a '3# &+*=/' "(/4/' 1/=' ? =//

HGE 8 D 5 5 & 8

A?@CH DC@J @ " A ?BA @ G= FAG? A F=B@ D= @E A? F A = A? =?E E E ?A =DD@=C GF@ F@C F@ DC A?@C G= AC G= ?A =G=C@ F= F=E ?A = FAC A @ ; F GF@? F@ DC A?@C G= F=C>@E G F F=B ?> I@@? A? @C?@E G F ? F@ =IAB@ C=? = A? F@ DCAE @E F@ ?BA @ F=E > B@?F J A? F@1C A = A? =?E = @E F= @] @D A? F= A = A? F@ F=E F=E ?A E@= ?> G F F J ; =?E A J=? A E F@ Z C F= 1 F@ DC A?@C <?@G F= ? F@ C=? = A ? b @ A? G= ? 1= A J J ?> = 1@ A? F@ = G@ = > A1 = 1@ A? =?E F= F@C@1AC@ F@ b @ A? 1AC F@ J A A? E@C G= GF@ F@C = F@ J @ A1 F@ DC@ @?E@E = @ I F@ DC A?@C E E AC E E ?A <?AG F= G= @] @@E ?> F = FAC =?E E@1C= E ?> F @ J D A @C =E F@ C=? = A? I@@? = A J D=? @E I =? ?BA @ = G= A? F@ 1AC J @C A = A? G!A E F> B@ I@@? J F @ D A ; I@ = @ F@ 1= A1 =? ?BA @ I@ ?> > B@? J >F @= F=B@ J @E F@ DC A?@C; DDA ?> F J A F=B@ I@@? >?AC=? A1 H C@= = FAC F@ =I @? @ A1 =? ?BA @ = @C@E F@ = @ J = @C = = @E ℍNℕd

'=' && 1 /44 ? =? ?E J @? 1AC =C @? = = =CB=? =DD@=C@E F= < "(22 F= F@ DC A?@C B@E ? F@ FA @ A1 F@ DCA @ AC =?E = @E = ? C @ CB=+ E= >F @C =?E F=E IA=CE =?E AE>Z?> ? F@ FA @ I ?A G=>@ F@ G 1@ A1 F@ DCA @ AC A = A?= J =< ?> F@C DC@ @? A1 JA?@ = = C@G=CE 1AC F@C @CB @ & F @ F@ DC T A?@C G= A C@ E ?> F@ G 1@ A1 F@ DCA @ AC >=B@ F@C F@ JA?@ F=C>@E A F=B@ I@@? A @? A D= = A= I F ? @=E A1 EA ?> A F@ DC A?@C <@D F@ JA?@ =?E ICA >F I= < F@ I G F =1AC>@E C@ @ D DA? =?E 1A C F ?> =?E]D@? @ = F=?>@ ?E A @C E>@ F@ E F= F@ DC A?@C G= ?A F@ @CB=? A1 F@ DCA @ AC I F= F@C@ G= @B E@? @ A1 F@ =C @? 123 7 U DA? =? ?E J @? ?E@C F@ . ,9 @A R - : F=C> ?> F@ DC A?@C = F@ @CB=? A1 F@ DCA @ C] G F @= ?> F@C D C @ A? = ? ?> 1AC AB@C@ >? =DD@=C@E F= F@ DC A?@C G= F@ EC B@C A1 = > = A= F GF F E I@@? F C@E I F@ E= I F@ DCA @ C] =?E F= F@ A @ F@C D C @ 1CA J F@ A= F$ G= , F@ E F= F@ C@ = A? A1 J C@ =?E @ B=? E E ?A @] I @ G@@? F@ DCA @ C] =?E F@ DC A?@C =?E F= F@ A E A? I @ A?B @E A1 J D @ =C @? 1<3 FA >F G= EA I @E GF@ F@C = D@C A? A E F@ F@ @CT B=? A1 @B@C= D@C A? = F@ =J @ J @ ?AG @ @E F= F@ J = " B

/(J+'4 2 F@ 1(27' F@ DC A?@C GFA G= ?E @E = = @C< A F@ W @@? 1AC @= ?> F@C JA?@ =?E = A 1AC @J I@KK @J @? ?E@C F@ - & J : : &= F@ 1 C @C< A F@ A @ AC A1 AJ = F@ DAC A1 2 = JA F =?E = F G= F E A C@ @ B@ =?E D = @

W b /) f 2('3# . = HMA +44/=2' +' :' !<('/# // <+(' 9/ ; +() '+ '24/ 42 49 = 1+=/ '49/ (/P ; +'& <('/44 Y INN "2(4 = /((2'/2<= W d /V +#:2' G IGH E YYA /) +44# G "I 6 3 ; 49 IIA GAD . " HIH

?' F@' A @ AC ' IA]' @= F' E= ' JA?@ ' C@ @ B@E' ?' D= J@?' A1'
AJ ;' F@'1= 'G@C@' @=C' A' DCAB@' F=' F@' F=E' =<@?' JA?@ '
A 'A1' F@' IA] '' F@' DC A?@C' G=' =DDA ? @E' I ' F@' AJ J A?@C '
A1' AJ ' ?E@C' F@' ' ,' :^ & J :' 8 ' ' G=' AIZ@ @E' F='
F@' .' ,' 9' @A' :' - ' : E E' ?A' @] @?E' A' D I ' @CB=? '
A @C E>@' 7 F@' >C@=' EA I ' F=B@' F=E' GF@ F@C' AC' ?A' F@'
.' ,' 9' @A' :' - ' : G=' J @=?' A' ? E@' D I ' @CB=? '
A1' F@' CAG?' F' =F' F@' DC A?@C' ' GA E' @@J' ? @?E@E' A'
DCA @ ' DC B= @' E@= ?> ' A1' F@' IZ@ ' A? '=>= ? ' F@ C' @C< '
=?E' @CB=? ' =?E' F@' @CJ ' A1' F@' -' & J ' :' ' :' @@J' A' A?T
1 CJ' F ' B @G' A1' ' I ' D@ = ' DCAB E ?>' 1AC' F' =' = @' = '
F H 1C3

?' ?E J@?' F=C>@E' F=' * =C ' AJ@C A?' A?' F@' ' A1' ?E J@?
* =C F' 9-.' 7 I @ ?> F@?' =?E' F@C@' F@' @CB=?' A1' ' @ @C'H A?'
F@' =J@' E=' =?E' @=C' A?@' C ?>' A1' F@' = E' ' E E' @=;' =?E' '
G=' AIZ@ @E' 1 C ' F=' F@C@' G=' ?A' DA B@' =B@CJ@?' F=' F@'
DC A?@C' G=' F@' @CB=?' A1' ' ;' -?E ' F=' ' G=' ?A' 11 '
'5 '=B@CC@E' F=' F@' G=' F ' @CB=?' =' F@' J@' F@' A @' F@'
>AAE ;' I ' G=' F@ E' F=' 7 I @ ?>' F@' @CB=?' A1' ' H G=' '
=' E@ C D A?' A1' F@' D@C A?' D1' * ' =?E' F=' F=' G=' =' 11 @?'
= @>= A?' F=' F@' IAC@' F=' F=C= @C;' -?E ' F=' C@=E ?>' =?E'
?E@C =?E ?>' F@' =?> =>@' @E' ?' F@' ?E J@?' =' F@' C@ '
A1' J=?< ?E' GA E' ?E@C =?E' F@' =J@' =?> =>@' 1' G@C@' @E'
?' A F@C' ? C J@? ' F@C@' A E' I@' ?A' EA I ' F=' ' JDAC @E'
F=' * ' G=' F@' '@ 3=?' A1' ' =' F@' J@' F@' A @' F@'
DCAD@C '"# B

?' ?E J@?' = @>@E' F=' F@' DC A?@C' G=' F@' @CB=?' A1' DA?' =?' ?T
EG=CE' =?E@C ' =?E' GF @' F' @CB=?' A @' F@' JA?@ ' A1' F@' E J@?'
= E' ' =?E@C ' F ' J = @C;' ' =?E@C ' G=' F@' =>@?' A1' * C ' =>= ? ' =' DC T
=?E@C ' =?E' F@' DC A?@C' G=' F@C' @CB=? ' ??E' F@' JA?@ ' G=' A?@C' 1AC' =CT
?' F@' DA @ A?' A1' ' =?E@C ' =' F@C' =>@?' =' F@' J@' @?' =' =' @CT
G=' =<@?' ' G=' AIZ@ @E' F=' F@' DC A?@C' A E' ?A' I@' A?' B=?' F@ J='
YB @E' @ F@C' A1' =C @?' =' =' @CB=?' AC' A1' =C @?' ;' I ' F@' I@ A?B @E'
@ A?' F@ E' F=' F@' =B@C J@?' A1' F@' DC A?@C' I@ ?>' F@' @CB=?' AL' JD @ =CT
A1' ' =?E@C ' J >F ' I@' C@Z@ @E' =' CD =>@' =?E' F=' F@' F=E' ='
D@ =' DCAD@C ' ?' F@' J A?@ ;' =?E' DA?' =' = @' C@ @CB@E' 'G=' @?
F@ E' F=' F@' A?B A?' G=' C >F ' 5CAA1' A1' F@' = @>= A?' ?'
F@' ?E J@?' F=' F@' DC A?@C' G=' F@' @CB=?' A1' ' =?E@C '
GA E' A? ' I@' ?@ @ =CZH 1AC' F@' D CDA @' A1' A?B ?>' F@' DC A? C'
A1' F@' AJ DA ?E' A11@? @' ;' I ' G=' b @' ??@ @ =C ' A' DDAC '
F@' F=C>@' A1' JD @' =C @? ' ' =?E@C ' F=E' =' D@ =' DCAD@C ' ?'
F@' JA?@ ' = ' =>@?' A1' * C ' =?E@C ' =?E' F@C@1AC@' F@' DCAD@C '
G=' G@ ' = E' ?' F J %N d

' -:' N,' -8 3 @ ' ' ' 9' NJ d' DC ? D= ' ?' F@' @ A?E' E@>C@@' 5C ? D= '=?E'
=?E' = @ AC @ ' I@1AC@' F@' 1= ' =C@' D ? F=I @' ?' F@' =J @' J=??@C'
= ' DC ? D= ' ?' F@' 1 C ' E@>C@@' =?E' = @ AC @ ' =1 @C' F@' 1= '
N@] @D ' C@ @ B@C d' =C@' =I @' A' JDC A?J@?' 1AC' =? ' @CJ' ?A '
@] @@E ?>' GA' @=C ' 1 3

d' 6@>' □' AB@ ' -' * ',' 6AI' - ' ' 9' ' -' @@ 6@>' & '5 G' ' ' ,'5'
F@' DC A?@C' G= A?B @E' A?' F@' A ? ' .8 ' ' BA' ' D' - -' 6@>' & ' B@C'
1AC' @JI@KK @J@?' A' F=' ' I@ =J@' ?T E@ ' W' ' :
?@ @ =C ' A' E@ E@' F ' DA ? ' @@ -:' N1d' 6@>' □' @?? ?> ' # ' ' ' :^
,' -8 3 @ ' ' ' . ' . ' ' D' 9 " B' 3A ' D' 98
D d' 6@]' B' AJ@C A?' .' ' ' ' : ' NC=d ' A' DCA @@E ?> '=>= ? '= @ AT
F@' ?E J@?' G=' A?' F@' ' @A' :' C @ ' @@BA ' D' .:

A? | A?A' =?'= @JD

DA?' F@' C = ' A1' =? ' ?E C?@? '1AC' =? ' A11@? @' ?' F ' F=D @C' F@' Z C ' J = %' ?E@C' F@' :' , ' 8' 3 @ ' ' %' ' ' NAd%' A?B ' F@' DC A?@C' A1' =?' = @JD ' A' AJJ ' F@' =J@%'!=?E%' F@C@ DA?%'F@' J = 'I@'D ? F@E' ?' F@' =J@' J=??@C' = ' 1' F@'F=E'I@@?' A?B @E' DA?'=? ?E J@?'1AC' F'= @JD

&F=' ' 11T @?'@BE@? @ A1' =?'= @JD' A' @=

& F@C@' =' A ?' F=C>@E' F@' DC A?@C'G F' =?'= @JD ' A' @=' :8' I 'A1' J @=' A1' ' F@@ @J=?%' '=DD@=C@E' F=' F@@ @J=?'G=' F@' A? C= AC'GFA' DD @E' J@=' D'=' =JD%'=?E' F@' A C @A1' I ?@ 'G=' 1AC'F J'@= F' JAC? ?>' A' @?E' I 'F ' @CB=? ' J@=' A' F@' b =C @CJ= @C @CZ@=? ' = ' F@' =JD%'=?E'=' A E @C' 1CAJ' @= F' J@ ' = @?E@E' F@' b =C @CJ= @C @ZD=?' F=E' FZD' AG?' = @ ' =?E' G@ >F %'=?E' G F' F@ @' F@' =?E' F@@ @J=?H' @CB=?' A>@ F@C' G@ >F@E' A ' A' @= F' A E @C' ?' = @?E=? @' F@' DCAD@C' b =? 'A1' J@=' 1AC' @= F' J@ ' F@'=JA ?'A1' F@'GFA @' F ' E@ B@C@E' G=' C@E @E' A' F@@ @J=?'=' DD @E' A' F@'W @@?%' =?E' F@' CD 'A1' F@' J@=' C@J= ? ?>'=1 @C'=' F@' J@ @'F=E' I@@?' DD @E'G=' =<@?'=G=' I 'F ' @CB=? 'A?'F '= A ?';' F@' DC A?@C%'F ' @CB=? %' =J@'A?@'E=' ?' F=C>@' A1' F@' J@=%'=?E' F@' =?E' F@'b =C @J= @C @CZ@=?' DCA @@E@E' A'G@ >F'A ' F@' J@=' A' F@'E 11@C@?'J@ J@?'G F' F@'b =C @CJ= @C @CZ@=? H'G@ >F %' F@' D ! A?@C' D ?>' F@'G@ >F ' ?' F@' =@' @1AC@' F@'G@ >FT ?>'G=' AJD @ @%'A?@'A1' F@' J@ J@?' ICA >F' I= <' F ' DAC A?%' G F' =' AJD=?' F=' 'G=' FAC'G@ >F ' @'G=' E@ C@E' A' G=%'=?E' F@' G@ >F ?>' DCA @@E@E' ' F C 1A C' J@ @' G@C@' G@ >F@E%'GF F' G@C@' DDA @E' A' I@' Z% F@' GFA @' 8 -g' I ';' =IA ' ' I ' A1' J@=' C@J= ?@E' AB@C%'GF F' ?' F@' A C @'A1' I ?@ 'GA E' F=B@'I@@?'C@JAG@E' I ' F@@ @J=?H' J=?' 'G=' E AB@C@E%'A?' ?B@ >= ?>' F@' AJD=? %' F=' F@' :' I 'G@ >F' A1' F@' b =C @CJ= @C @CZ@=?' F=E' I@@?' C@JAB@E%'=?E' A? @=@E' ?E@C'='I@? F%'=?E'='1= @' :' I 'G@ >F'F=E'I@@?' I @E'1AC' %'=?E' @E' ?'G@ >F ?>' F@' F C 1A C' J@ @ %'=?E'=' F@' J@ @' I@ ?>' C@ G@ >F@E%' 'G=' 1A ?E' F=' F@' G@ >F ' E@ B@C@E' G=' : . F %' ? @=E'A1'8 -: I %'=' ?' F@'1 C 'G@ >F ?>' '=DD@=C@E'%' A' F@';' =?E' =1 @C' F@' C @' Y' @>F'G=' DD @E' A' F@'E 11@C@?' J@ @ %' F@' CD 'G=' =IA ' 8' I ' ? @=E' A1' 'I %'=' ' F=E'=DD@=C@E' A'I@' F@' DC A?@C'=I A?E@E' A?' F@' AJJ@? @T J@?' A1' F@' ?B@ >= A?' 'G=' AIZ@ @E F=' F@C@' G=' ?A%' AB@C' = ' A' DCA] J=@ ' A??@ @E' G F'=?'= @JD ' A' @=' =' A' Z 1 '=' A?B A?';' I ' F@' =@' G=' @1' A' F@'Z C %'GFA' 1A ?E' F=' F@' DC A?@C'1C= E @? ' I @E' F@'1= @'1AC' F@' C @'G@ >F 'G F' ? @?' A' F@=';' F=' F ' ? @? A?' G=' A' @=' F@' E 11@C@? @' I@ G@@?' F@' Z ' CD '1AC' GF F' F@' GA E' F=B@' A'= A ?' A' F ' J= @C'=?E' F@'=DD=C@?' CD 'C@J=?T ?>'=1 @C' F@'1= @'G@ >F ?>%'=?E' F=' ?A F ?>' C@J=?@E' A' F@' EA?@%' A?' F 'D=C%' A' AJD @ @' F ' F@J@%'@] @D' A' =CC '=G=' =?E'E DA @'A1' F@' J@=%'GF F' F@'GA E' F=B@' EA?@' 1' F@'1C= E' F=E' ?A 'I@@?'E@ @ @E';' =?E%' DA?' =' =@' C@ @CB@E%' 'G=' C>@E' F=' ?A F ?>'G=' EA?@' I ' F@' DC A?@C'G F' C@1@C@? @' A' @= ?>' F@' J@=' ';' = ' F=' F@'E E'G=' A'D '='1= @'G@ >F ' ? A' F@' =@';' I ' F=' = 'G=' AA' C@JA @' @ A?E %' F=' F@' DCAD@C ' ?' F@' J@=' '=' AA?'=' ' G=' D ' ?' F@' =@'I@ =J@' F@'DCAD@C 'A1' F@' W @1?' ' ' G=' F@ E' F=' F@' A?B A?' G=' C >F %' 1

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= ' GF F' ICA >F ' F@' = @JD ' A @' A' AJD @ A?;' =?E' 1' F@'
= = ' C=? = A?' F= ' 1@AJ J@? @E' GF F' GA E' F=B@' @?E@E' ?' F@'
A11@? @' 1' DA ' ? @CC D @E' F@C@' ' @=C ' =?' = @JD ' A' AJ J '
F@' A11@? @' ' A' F@' @ A?E' DA ? ' F@' DCAD@C ' G= ' ?' F@'
B@?EAC' ? ' ' D= @E' A ' A1' F J ' A' F@' B@?E@@' ! ' E@ B@C ' 7E3
' A' F@' DC A?@C' ?A !' I@ ?>' @? @E' A' I@' = b @E' GF@C@' F@' "A' = b ='
@B E@? @' DCAB@ ' =?' @JI@KK @J@? ' =?E' ?A ' =C A ' @@' - :' ,' -8'
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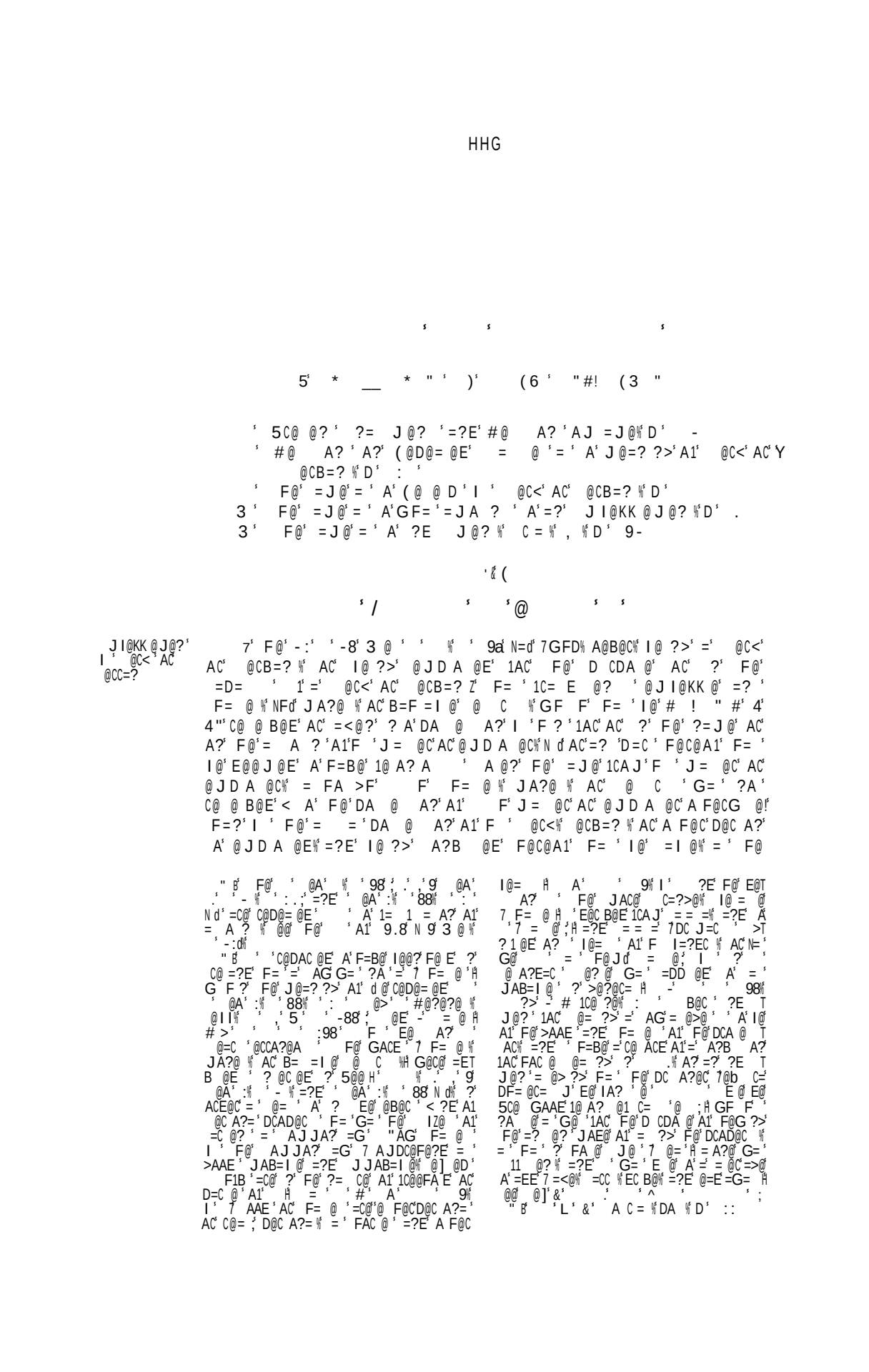

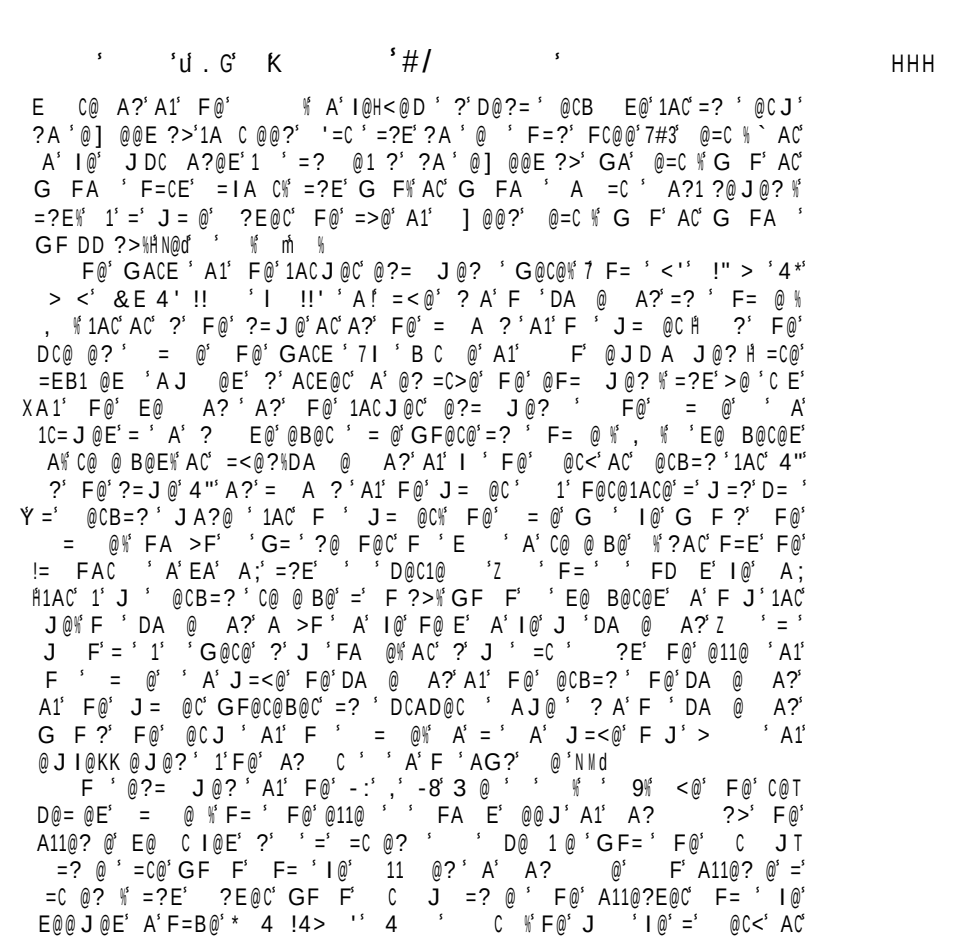

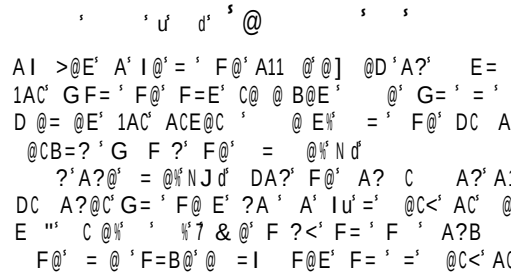

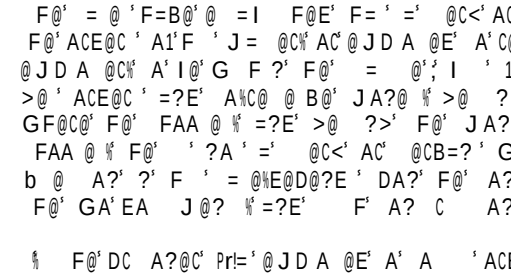

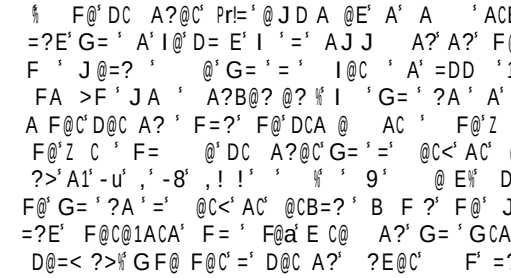

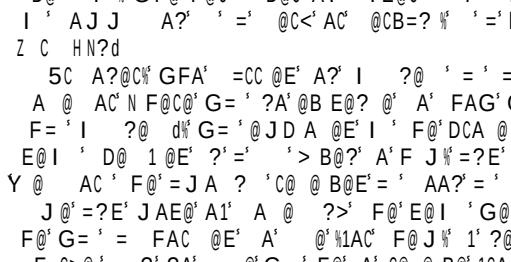

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@ J D A @E = @C< AC @CB=? F@ AC ? F@ =D= A1 @C< AC @CB=?
A F@ A = I A=CE F@ G= @ J D A @E ? F@ =D= A1 @C< AC
@CB=? A F 1= F@C =?E G= DCAD@C A?B @E A? =?= ?E J @? ?
GF F F=C>@E F J G F F=B ?> @ J I1@KK @E F@! J A?@ A1 F
J = @C NCd
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@B@C =?E A F@C GFA G@C@ ?=J @E F@ @ D@C A? =?E F@
DC A?@C G@C@ = AJ J @@ 1AC J @E 1CA J F@ J @ J I@C A1 GA
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F@ I@=C@C A F=C@ ?' F@ @] C A? =?E @E A F@ J F@
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DCADAC A? A F@ ? J I@C A1 J @ J I@C F@ E A1 F@
D@C A? =DDA ? @E A @ F@ <@ G= A D= AB@C F@ J A?@
C@ @ B@E 1CA J F@ C = @ A = D@C A? =DDA ? @E I F@ AJ J @@
A C@ @ B@ 1AC F@ @ A1 F@ A @ @ ; F@ C@ @ B@E ?A C@ J
?@C= A? 1AC F@ C @CB @ F@ DC A?@C = J @ J I@C A1 A?@ A1
F@ AE>@ =?E G= A?@ A1 F@ D@C A? ?A J ?= @E A @ <@ =?E
A E = ? J I@C A1 F@ J =?E 1C= E @? E DA @E A1 F@ J A?@
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& F@C@' =' @CB=? ' GFA @' E ' G= ' A' =<@' =' I=C>@' I@ A?> ?>' A' F ' J = @C' G F' =C>=' 1CA J' ' A' ' =?E' C@ @ B@ I= < F' C@ C?' =C>A ' =?E' 1CA J' F' D@C A? ' = ' : ! ' J = @C' FA E' E C@ ' =?E' F' A? ' A? C=C ' A' F@' @]DC@ ' ACE@C ' A1' F ' J = @C ' GF F' G@C@' A' C@ C?' @ J D Z' 1CA J' ' A' ' D=C ' A1' F@' C@ C?' BA =>@' A' ' AA< ?@B@C F@ @ ' =' C@ C?' =C>A' 1CA J' ' A' ' =?E' C@ @ B@E' F@' 1C@ >F ' 1CA J' F@' AG?@C' A1' F@' =C>A' NGFA' <?@G' A? ' F@' DC A?@C' ?' F@' !=? = A?d =?E' E E' ?A ' = A ?' A' F ' J = @C' 1AC' F@' 1C@ >F =?E' E@? @E' F=B ?>' =CC @E' F' C@ C?' =C>A ' @ E F= '! F@' J A?@ ' G= ' ?A ' C@ @ B@E' I ' F J' 1AC' AC' ?' F@' ?=?Z@' A1' AC' A?' F@' = A ?' A1' F ' J = @C =?E' F= ' F@' G= ' ?A ' > ' A1' @ = I @KK @ J @? ' ?E@C' F@' Y-' ,' -8' 3 @ ' ' ' 9' 1>A

**/)+' &(/ ' :'# =21 /4# ' A @ ' ?' F@' ?= C@' A1' =' 1C @?E ' A @ I ' F=B ?>' C @ ` ' ?A ' @?CA @E' AC' @C 1 @E' ?E@C' 1F@' C @?E ' A @ @ ' ` @C = ?' A1' GF F' C @ ' =C@' ?' C@ C= ? ' A1' C=E@ =?E' F@C@1AC@' BA E ' ?A ' =?' @>= ' A @ ' ?' F@' @? @' F= ' ' ' E =I @E' 1CA J' DCA @ ?>' =' @CB=? ' 1AC' @ J I @KK @ J @? 1 3' (

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= @>= A? A 1=C = C@>=CE F@ E@ C D A? A1 F@ DCAD@C F= =
I@ = ?@E 1 F@ A1@?E@C F= I@ DCAB@E A F=B@ @ J I@KK @E
4"' *"6>#> '6EE ! #' 4"' #! E4 #' 4*' =? = J A ? = FA >F
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F@ DCAB A? A? = ?@E ?' @ . =C@ ? @?E@E A C@ J AB@ F@ 36/14 AI
B@C A? E@C=I @ E 11 @ GF F A A1 @?' DC@B@? @E =' DCA @ LRR' 40
!4 ?E@C F@ C@D@= @E = @ 1CA J I@ ?>' @11@ = F@ 1
= @ DA?' GF F F@ J = @C F=E =CC B@E = F@ A? A?' A1' F
@CB=? H' > =?E' E@ @C J ?@E' A DCA @ @ A E' F=CE @B@C' I@
= E' I@1AC@ F@' Z C A?' = A ? A1' F@' C @' GF F 1ACI E @B E@? @'
A' I@ > B@?' A1' GA' E ? =?E' ?E@D@?E@? 1@ A? @ DA?' A?@'
?E J @? ; C@D@= @E A CC@E' F= F@' D@C A?' 1CA J' GFA J'
F@' DC A?@C F=E' C@ @ B@E' F@' J A?@ A E' ?A D@ 1 F@' J AE@'
A1' D= J @? ; =?E' F=DD@?@E' ?A ?1C@b @? F= F@' DC A?@C
F=E' C@ @ B@E' =' D @ @' A1' A ?' AC =' ?A @' A1' =' =C>@C = J A ? F=?' F@'
J' GF F' G= A' I@' D= E' A?' = A ? A1' F J = @C =?E' F=E' > B@?'
F=?>@ N d ?' F@' 1AC J @C' A1' F@ @' = @ F@' Z C A1 @?' = b @E
1CA J' =?' J DC@ A?' F= F@' DC A?@C F=E' = @E' I J =<@' =?E' ?T
? @? A?= @CCAC ` =?' J DC@ A?' GF F' GA E' F=B@' I@@?' C@ J AB@E
1' F@' 1= DA?' GF F F@' J = @C DCA @@E@E' A E' F=B@' I@@?' 1
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Y F= F@' F=E' C?@E' ? A' J A?@ ?' =? G= =?E' G= F@ E' F=
F@' ?E J @? G= ?A DDAC @E' I F@' @B E@? @ NKd
G= F@' E A1' =?' =>@? A1' =' A= A @ A' A @ =?E' C@T
@ B@' 1CA J' D@C A? GFA' IA >F A= 1CA J' F@' A @ 1AC GF F'
F@ G@C@' A' D= I G@@< ? = J @? F' G@@< D= J @? =
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=?E' A?' F' @ E= A' D= F@' >CA = J A ? C@ @ B@E' I F J ?'
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FC@@' A ? F=C>@E' ?' F@'1 C A ? F@' = A1' @ J I@KK ?>' =' J'
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> =CE =? %' I ' A1' F@' AB@C @@C ' NMd' A' GF@C@' =' A @ AC' A1' C= @ ' G= ' =DDA ? @E' ?E@C' =?' ACE@C' A1' F@' DAAC' =G' IA=CE%' * = @%' %' F@ E%' A?' F@' = FAC ' A1' F@' DC@ @E ?>' = @%' F= ' F@' G= ' ?A ' ?E =I @' 1AC' E DA ?>' A1' F@' JA?@ ' F@' C@ @ B@E; 1AC' F@' G= ' ?A ' =' @CB=? ' = ' = %' I ' =?' ?E@D@?E@? ' A11 @C% I@G@@?' GFAJ' =?E' F ' D@KEAC ' ?A?@' A1' F@' ACE ?=C ' = C I @ ' A1' @CB @' @] @E% 723

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' F ' @?= J @? ' EA@ ' ?A ' @@J '% A' C@= F' F@' 1A AG ?>' = @' F@' DC A?@C' G= ' =DDA ? @E' =' A @ AC' A1' DAAC' C= @ ' A1' =' ? A?' ?E@C' =?' ACE@C' A1' F@' DAAC' =G' IA=CE%' GF F' F@' A C ' A1' W @@?H' @? F' F@ E' ?B= EG =?E' ?' A? @b @? @%' =' B@ C ' J @@ ?>' E ' @ @ @E' F@' DC A?@C' = =? ' AB@C @@C' 1AC' F@ C' D=C F' ?E@C' F@' 8 ' @A ' %' ' -%' ' .%' =?E' F@' Z @ ' ?' D@ ' @ A? ' A?1 CJ@E' F ' =DDA ? J @? %' GF F' D@ 1 @E' F= ' F@' FAD E' E F=C>@' = ' F@' E @ ' A1' AB@C @@C ' F@' DC A?@C%' F=B ?>' C@ @ B@E' JA?@ ' 1AC' GF F' F@' F=E' ?A ' = A ? @E%' G= ' ?E @E' 1AC' @JI@KK ?>' F ' JA?@ ;' =?E' A 1@%' %' F@ E' F= ' F@' DC A?@C' G= %' A' = ' ? @? ' =?E' D CDA @ %' =?' AB@C @@C%' =?E' F= ' F@' G= ' ?A ' @C<' AC' @CB=? ' @ F@C' A' F@' AB@C @@C ' A1' F@' D= F' AC' A' F@' > =CE =? %' A1' F@' ? A?%' 1;!3

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' @ ' 9' A1' F@' - :' ,' -8' 3 ' ' %' DC ? D= ' ?' F@' @ A?E' E@>C@@' =?E' = @ AC @ ' I@1AC@' F@' 1= %' = H@' D ? F=I @' ?' F@' =J@' J =??@C' = ' DC ? D= ' ?' F@' 1 C ' E@>K @@' ;' =?E' = @ AC @ ' =1 @C' F@' 1= ' N@] @D ' C@ @ B@C ' A1' A @?' DCAD@C d' =C@' =I @' A' I@' JDC T A?@E' 1AC' =? ' @CJ ' ?A ' @] @@E ?>' GA' @=C %' 1C3' !

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WWb' /) ' ' 27 '=/ ' : ' .' /' ' ' ' .YD' ? G ' ' .YE' +#' .EIY' 4' 49/' 4(+*' +44/=2 ' ' 9/*:' 49+4' 49/' "(=2 ' /(' 7+=' ' 24' 49/' =/(J+ '4 2&' 49/' 2J/(=//(=' +' :' : :' ' 24' (/=/(J/' 49+4' "2 '4 '"'7& 6 3' ,' (<;+' ' G' 2V' ' ' HMY' " B' /) ' ,' + ;"=2 ' ' ' 2V' ' ' HHA' 9/' 1+=/' :2/=' '24' =4+4/' 792=/' 1*/(0' 2(' =/(J+ '4 9/' 7+=' +**/) / :' 42' 3/' /' ' &' +("/ '4/(' .M' 2V' ' ' ' GIY' HA

' ' ' ' .YN' ' ;"' HHE WB' 9=' 14' / ' +3*/=' 6<=4 1/=' '' "/44# =/== 2 '=' ='' 1/(4+ '' 1+=/=' 42' : ="2=/' 2& 49/ ; ' =< ; ;+(*# " B' #' =/1' H' 49 =' 14' =9+*#' '24' /V4/ ' :' 42' 124*+' : "*B' 2*' . ' "' .EA ' =' 42' 49/' "(21// :P ')=' +)+ '=4' +11/==2(/=' =/' J2*' . ' "' .DI' O ":B' J :' J2*' . ' "' YG

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1 = D@C A?G= @JD A @E = F@ @CB=? A1 = ACDAC= A?F@ /(J+'4=2&
G= = @CB=? G F ?F = @= FA >F?A E =DDA ? @E?AC p2("2(+4 2'=
@B@?=DDA ? @E = =1 ?E@C F@ AJ JA?@= A1 F@ ACDAC= A?1&3
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G= @JD A @E I J=? E 11@C@?FA @ A?@= F ZA C?@ =?E D= E &/(/'4 "/(=2'=
F AG?@]D@? @A A1 F @JD A @C ?AC = ?=? A1 F@ C A ? ?> 7+=7 49
B@G F =? A1 F @JD A @C ?AC = ?=? A1 F@ C A ? ?> 49/(/"/+*/:
FA @ F@?E J@? F=C>@E F@DC A?@C G F@JI@KK @J@? =4+4<4/
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D A A1 =C= G= AJD=? = A?@A1 F@ C = A? ; I F@G= = A
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F@' DC A?@C' ?E@C AA<' A' EA' I ?@ ' 1AC' F@' DCA @ AC % GFA' G@C@' GFA @ = @' >CA @C ' ?' 7 CJ ?>F=J ' =?E' A F@C' AG? % 1AC' =' AJ J A?' A1' F= 1' D@C' @? % A?' F@' =J A ?' A1' ?BA @ % =?E' 1' = ' =? ' ? @' F@' J =E@' =' I=E' E@ I % F@' =>C@@E' F= ' F@' AJ J A?' A?' F ' = A ? ' 1AC' G@ B@' J A? F ' I= <% AC' 1CA J' F@' J @' A1' E@= ?>% 1' 1AC' =' FAC ' D@C AE % FA E' I@' E@E @E' 1CA J' F ' 1 C ' @ @ J @? ' =1 @CG=CE ;' AJ J A?' A' AB@C' = ' @] D@? @ % ?@' A1' F@' DCAT @ AC ' DCAB@E' F= ' F@' DC A?@C' @? ' D' @B@C ' G@@<' =' ' A1' F@' C@ @ D % =?E' F= ' F@' G= ' ?' F@' F=I ' A1' E@ C I ?>% F J' = ' =>@? ' AC' C=B@ @C' ?' F ' @ @C ' F@' DC A?@C' G= ' D= E' =' AJ J A?' A?' F@' ACE@C ' =<@?' I ' F J' ;' =' I ' G= ' @? ' A' F@' AJ @C' G F' F@' >AAE % =?E' GF@?' E @% F@' ?= J @' A1' F@' AJ @C' =?E' = J A ?' G= ' @? ' A' F@' DC A?@C' = ' CJ ?>F=J ' " A F ?>' G= ' D= E' F J

1E' /) ' +6 */#' ' ' ' G ' 9/' 1+=/' +*=2' =4+4/ :' 49+4' '' /+=/=' 2% *2=='3# ' /) *) / ' 1/ ' 2(' / ; 3/aa*/ ; / ' 2% +' =4+4 2 ' ' =/(J+' 4' 49/' & =+) /' 9+ :' 3// '' 42' ; +0/')22 :' 49/' *2=='42 49/' "+(4 1<*+(' 12 ; "+' # 3# 792 ;' 4' 7+=' =< &/(/ : ' 2<4' 2% 49/' &<' :=' 2% 49/-' 12 ; ; 44// ' 9 =' &<' :' 7+=' +' ' & ;' :' &(2 ;' 49+4' 7 9 19' 4J+=' '

49/' 1+=9 /(=' 9+' :=' &2(' "+# ; / ' 4' 2J/(' 42' 49/' =/J/(+# 12 ; "+' /=' 2(' 43 / (' 3+' 0/(=' 4' 7+=' '' 49/' 9+' :=' 2% 49/' 3+' 0/(=' 2% 49/' 12 ; ; 44// ' +' :' 7+=' :(+7 '' 2<4' 3# 19/T</=' =) ' / :' 3# 49/') / ' /(+# ; +' +)/(, , "3% /V ' ! 2<(*+# ' /33 ' EG' 1 4/ :' G +#/=$) ' ' ' ' IEA

= A ?J A?' A?' F@' =JA ?' A @ @E' A1' = A ? ' 1AC' A @ A?' G@C@' @? ' F J' ?E@D@?E@? A1' FA @' E @' 1AC' F@' ACE@C ' F@' F=E' AI = ?@E' =?E' F@' C@ @ B@E' ?A' AJ J A?' 1AC' F= ' GAC<' ;' G= ' ?A ' AD A?= ' G F' F J' ;' F@' G= ' IA ?E' ?E@C' F@' =>C@@ J @?' ' A' A @ ' GF= ' G@' = <@E' F J ;' = ' A C' E@I ' G F ?' F ' E C ;' F= ' G= ' F@' ?= C@' A1' F ' I ?@ ' $ F@' ?= C@' A1' F@' I ?@ ' A1' =' D@C A?' @JD A @E' I ' ' = ' =?' =>@? ' ?' F@' A ? C ' A' A @ ' = ' A C' E@I ' =?E' A' >@ 4GF=' ACE@C ' F@' D @= @ ' =?E' A?' FA @' ACE@C ' C@ @ B@' AJ J A?' ' G=' @1' A' F@' Z C ' A' E@ E@' GF@ F@C' DA?' F@' 1= ' F@' DC A?@C' G= ' = ?>' ?' F@' =D= ' A1' @C<' AC' @CB=? ' A' F@' DCA D AC ' AC' J @C@ ' = ' F@ C' =>@? ' NCd

F@' DC A?@C' GFA' G= ' ?E @E' ?E@C' .' ,' 9' @A' :' ' - ' ' : .' ' ; /(/' 12 ; P ; == 2 '' +)/ ' 4 =' '24' +' 1*/(0 2(=/(J+ '4' 9/((' ; <=4' 3/' +' "27/(' 28' 12 '4(2*']' =<19' +' "/(=2 '' 42' ; +0/' 9 ;' +' 1*/(0' 2(=/ ' (+<4

G= ' @JD A @E' ?' " AC F J F@C =?E' A' AI = ?' ACE@C ' F@C@' 1AC' F@' = @' A1' CA?' 1AC' F@' DCA @ AC ' GFA' =CC @E' A?' I ?@ ' ?' =11ACET F C@' = ' J =? 1= C@C ' A1' CA?' ?E@C' F@' ?= J @' A1' 7 F@' F@ A?' =C' CA?' AJD=? 'H = ' =' @C = ?' AJ J A?' DA?' F@' ACE@C ' GF F' F@' FA E' AI = ?' F ' @JD A J @?' AA<' D = @' ?E@C% F@' 1A AGT ?>' @ @C' 1CA J' F@' J =?=>@C' A1' F@' DCA @ AC H GAC< ' ;' 7 ?' C@D ' A' A C' @ @C' G@' =C@' ?A ' E DA @E' A' =DDA ? ' =? ' =>@? ' = ' " @GT = @' I ' 1AC' = ' I ?@ ' A ' EA' 1AC' ' G@' F= ' I@' F=DD ' A' D= ' A ' =' AJ J A?' & @' @]D@ @E' F= '=1 @C' A C' A?B@C = A?' G F' F@' GC @C' =' >AAE' I ?@ ' GA E' C@ H F@' GC @C' A1' F ' @ @C' G= ' ?A ' = @E' ;' I ' F@' = F @C' A1' F@' AJD=? ' GFA' F=E' ?A F ?>' A' EA' G F' F@' @JD A J @?' A1' F' D@C A? ' = ' F@' DC A?@C' = E' F= ' =' D@C A?' GFA' <@% F@' DC A?@C' >A ' ACE@C ' A?' AJ J A?' G= ' = @E' =?' =>@? ' ?' F@ C' C=E@' =?E' F= ' F@' F=E' ?A' EA I ' I ' F= ' F@C@' G= ' AJ@' A F@C' @ @C' =DDA ? ?>' F@' DC A?@C' =?' =>@? ' 1AC' F@' DCA @ AC ;' I ' F@C@' G= ' ?A' @B E@? @' A1' AC' A1' ?A @' A' DCAE @' F' @ @C$?ACX' E E' ' =DD@=C' GF@ F@C' F@' DC A?@C' G= ' @JD A @E' I ' =? ' A F@C' D@C A? ' F=?' F@' DCA @ AC ' ' &= ' F ' E ' A' = A ?' A' F@J ' 1AC' =? ' JA?@ ' GF F' F@' J >F ' C@ @ B@' J J @E = @ ' A?' F@' C@ @ D ' A1' ' F@' DC A?@C' F=E' C@ @ B@E' @B@C= ' % J ' A1' JA?@ ' GF F' F@' F=E' ?A ' = A ? @E' 1AC' ' G= ' F@ E' F= ' F@' A E' ?A ' I@' A?B @E' A1' @JI@KK @J@?' =?E' F@' >CA ?E ' @@J ' A' F=B@' I@@?' ' F= ' F@' G= ' ?A ' @C<' AC' @CB=? ;' 1AC' F@' GACE ' @C<' AC' @CB=? ' JD @E' F@' @] @? @' ?' AJ@' A?@' A1' F@' DAG@C' A1' A? CA ' =?E' F@C@' F@' DC A?@C' G= ' =' AJ J A?' =>@? ' =?E' ?A' JAC@;' -?E ' F= ' ' E E' ?A ' =DD@=C' F= ' F@' DC A?@C' G= ' @JD A @E' A' C@ @ B@' JA?@ ' N d

DA?' =?' ?E J@?' 1AC' @JI@KK @J@?' ' =DD@=C@E' F= ' F@' ' "/(=2 '' / ; P DC A?@C' <@D ' =' C@1C@ FJ@? FA @' =?E' F@' DCA @ AC ' GF ' F@' "*2#/ :' 42') /4' G= ' A' EA ?>' @?>=>@E' F J' A' >@ ' ACE@C ' 1AC' J =? C@' A?' GF F' 2(: /(=' &2(' 49/' ACE@C ' F@ ' DD @E' ' 1CA J' F@' AC@ ' F@' DC A?@C' G= ' A' =+*/' 2' ; +' <(/ ' A @ ' F@' JA?@ ' =?E' D= ' ' = ' A? @' A' F@J ' ;' F@' G= ' = A' A' @?E' <' : /(' 49/' F@ J ' G@@< ' = A ? ' FAG ?>' aBF=' F@' F=E' A E' =?E' GF= ' F@' F=E =" /1 +' 1 (P 1< ; =4+ ' 1/=' 9/*:' ' 24' 42' 9/' =/(J+ '4

7"3' /) ' ,' 9+4/(' N 2V' ' ' .' 9/' 2 ; ;2 '' /(6/+ '4' +&4/(' 12 '=<*4 ')' **/=' ' E49' #' .EY. " ' +#' ' ' ' .H' '' /V ' +((' .' 3/ ')' 1 4/ : ' 210' 3<(' ' ' =+ : ' 0 '' 49+4' 1+=/' 49/' "(P =2 ' /(' 7+=' +' 4(+J/ /(' 27' +' 4(+J/**/(' +*492<)9' 9/' 4(+J/*=' &2(' ;2(/' 49+'' 2 ' /' "/(=2 '' 2(' & ' ' ' =' 42' =2 ; /' /V4/ ' 4' < ' : /(' 12 ' 4(2*' + ' :' ; <=4')2' 9/(/' 2(' 49/(/' +=' 9/ =' 2(: /(/ :' ? 9<4' '' 49 =' 1+=/' 49/' "(=2 ' /(' 1+ ' ' '' ' 2' =/ ' =/ ' 3/' =+ :' 42' 3/' < ' : /(' 12 ' 4(2* $ ' "2 ' 4' 7+=' +*=2' =4+4/ :' +=' 42' 79/49/(' 49/' "(=2 ' /(' 12<*:' 3/' 4(/ :' ' ' 4+&&2(: =9 (/ ' 3<4' '249 ')' 7+=' =+ :' 2 '' 49 =' "2 ' 4' '' /)' & 4/' ' ** + ; =' ' =+ :' 9/' 12 ' 1<(((/ :' '' 49/' : /1 = 2 '' ' ' /)' & ' +#' 02 '' 49/')(2<' :' 49+4' 4' 7+=' '24' =4+4/ :' 49+4' 4' 7+=' 49/' "(P =2 ' /($' :<4#' 42' (/1/ J/' ; 2 ' /#' $

C@ @ B@E @ G= A I@ D= E I AJJ A? E E ?A =DD@=C
F= F@ F=E ?E@C =<@?A > B@=? E@1 ? @b =? A1 J@ AC
=IA C A F@I ?@ ; I F@G= A= ?=D=C =C E C
=?E ?F@ DC ? @E 1ACJ > B@?A F J A? GF F A J=<@ F
C@ C? F@ G= = @E =>@? 1AC F@ C<@?F@=E E C F@
DCA @ AC = E 7F@ G= A >A FCA >F F@ A ? =?E @@ F@
1=CJ@C =?E >@ ACE@C @ G= A I@ A? ? = E C ?> F@
@= A?=JA?> F@ 1=CJ@C I @b @? 4 F@ DCA @ AC @?
=C>@ b =? @ A1 J=? C@ A AC@ = C<@?F@=E GF F G@C@
?E@C F@ A? CA A1 F@ DC A?@C GFA AA< F@J ?F A AG?=J@
=?E D= E F@ C@? A F@ AG?@C I G= C@D= E F C@? I F@
DCA @ AC GF@?F@ = A ? G@C@ =EZ @E F< DC A?@C DT
D @E F@ J=? C@1CAJ F@ @ AC@ ; I E E?A =DD@=C F= F@
1ACJ@C JAE@A1 DD J >F ?A F=B@ I@@?C@ AC @E A 1 1A ?E
A?B@? @? 1 @CG=CE F@ DC A?@C >?@E =DCADA = A =
> =C=? @@ A @ A @? C@ F@ DCA @ AC ?C@ D@ A1 F@ C
A??@] A?G F F ?=GF F = @E F= F = C G= =
I@ E@ AJJ A? @ J = @E = =@=C F DCADA = A?T
= ?@E =?A @ F= AJ@ =JA ? A1 = =C J I@ D= =I @ AC
F@ A @ GA E ?A ? C@ =?E F@ DCA @ AC GAC@ F= F@
=>C@@E A > B@ F@ DC A?@C F= = =C F@ DC A?@C G= = AG@E
A >@ ? =CC@=C F= F@ C@ = ?@E ?F =?E J A? ' F@
= <?AG @E>@E F@ F=E C@ @ B@E =?E G= C@= @E = =E@I AC ?
C@ D@ A1 F@ = @>@E @JI@KK @J@? G= F= F@ 1C= E @? C@ C?@E F@ ?=J@ A1 FC@@ D@C A? = F=B ?>F=E J=? C@G FA D= ?>1AC GF@?' ?1= F@ F=E C@ @ B@E F@ J 1CAJ F@J F@ b @ A?GF@ F@C AC ?A F@G= = @CB=? G F ?F@ = @ G= @1 A F@ Z C GFA A?B @E; I A?= = @ C@ @CB@E A?F@ b @ A? GF@ F@C F@C@ G= =? @B E@? @ F= F@ G= = @ !B=? AC GF@ F@C F@ b @ A?G= ?A 1AC F@ Z E>@ =?E 1 A; GF@ F@C A >F ?A A F=B@ I@@?E@ E@E ?F@ DC A?@CH 1=BA C G= F@ E F= F@ @B E@? @ E E?A DCAB@ F= F@ DC A?@C G =@CB=? A1 F@ DCA @ AC I F= F@ C@ = A?I@ G@@?F@J! G= C= F@C F= A1 DC ? D= =?E=>@? 1 3

/(J+'4 (/P 1/ J ')'1/(P 4+ '' "2(4 2 ' 2 49/ "(2 4 2 -22:=2*:

F@ DCA @ AC F=E = A @C =?E F=C>@ =?E @JD A @E F@
DC A?@C = =D = ?A1A?@A1F >F=C>@ A =CC A =?E @ A= =?E F E G= A IC ?>I= <F@ JA?@ 1AC GF F F@ A= A E I F@G= @? @E A GA F CE A1 F@ E 11@C@? @ I@ G@@? F JA?@ =?E F@ B= @ = F@ A @C =?E E @ @ C@ @B@E G@? G=>>A?A=E A =<@EAG?F@ C B@C A F@ I@ J=C<@ =?E F@ A E F@J = = ?IACA >F = @ >F @@?F ?> D@C F= ECA? F@ B= @GF@?F@ C@ @B@E F@J F=B ?>I@@?1A C @@? F ?> F@ F= ECA? @ @JI@KK @E F@ JA?@ I G= C>@E F= F@ G= ?A = @CB=? G F ?F@ = @ F@ DCA @ AC ?F@ F@ F=E =!ZA ? ? @C@ G F F@ DCA @ AC ?F@ JA?@ F@ C@ @B@E J=ZAC A1 F@Z E>@ F@ E F= F@ G= = @CB=? G F ?F@ = @ A11@? @G F ?F@ = @ 1>3

@?H ?@? C?@CH J=?C@ @B@E =?ACE@C A?F J = @CH = A ?1AC

]' EAK@?' A11@@ DA ' F=?E @ ' F ' I ?@ ' I@ ?>' A' C@ @ B@' ACE@C ' =<@' F@' ?@ @ =C ' J = @C = ' 1CA J ' F ' J = @CH ' A <' GAC<' F@ J ' D' E@ B@C' A ' F@' =C @ ' C@ @ B@' F@' J A?@ ' 1AC' F@ J ' =?E' D= ' AB@C' F@' GFA @' J A?@ ' A' F ' J = @C' ;' I ' = ' F@' @?E' A1' I@' G@@<' F@' G= ' @? @E' A' C@ @ B@' =' DCADAC A?' A1' F@' J A?@ ' I= <' 1AC' F ' GAC<' DA?' F@' =C @ ' ?' F@' DC@ @? ' = @' F@' F=E' =<@?' F@' J = @C = ' 1CA J ' F ' J = @CH ' A <' J =E@' F@' A11@@ DA ' F=?E @ ' A?' F ' DC@ J @ ' E@ B@C@E' F@ J ' A' F@' A J @C' =?E' C@ @ B@E' F@' J A?@ ' ;' I ' F@' I =E' A? @= @E' F@' C=? = A?' 1CA J ' F ' J = @C' =?E' <@D ' F@' J A?@ ' GF F' G= ' FC@@' F ?> ' =?E' A1' GF F' F ' F=C@' GA E' F=B@' I@@?' A?@' F ?>' DA?' =?' ?E J @?' 1AC' @ J I@KK ?>' F@' FC@@' F ?> ' = @ ' EA I @E' GF@ F@C' ' G= ' ?A ' C= F@C' =' 1C= E @?' A? @= J @?' A1' F@' ACE@C' =?E' =?' @ J I@KK @T J @?' A1' F@' J = @CH ' J = @C = ';' I ' DA?' =' =x@' C@ @CB@E' = ' F@' Z E>@ ' GFA' J @ ' FA >F ' ' G= ' =?' @ J I@KK @ J @?' A1' F@' J A?@ ' =?E' F= ' F@' A?B A?' G= ' C >F ' 1 3

& F@C@' =' @C<' A' =' I=?< ?>' 1 C J ' G= ' A' C@ @ B@' A?@ F CE' A1' A?@' A1' F@' D=C ?@CH ' DCA1 ' I@ ?>' F@' 1 1 @@? F' F=C@' A1' F@' GFA @' DCA1 ' A1' F@' FA @' A' GF F' F@' A F@C' D=C ?@C ' = @? @E' I ' F@ ' A? E@C@E' F@' DC A?@C' ?A ' =I @' A' F@ J ' 1AC' A @ ' G= ' F@ E' F= ' F@' DC A?@C' G= ' ?A ' =' D=C ?@C ' @' G= ' A' C@ @ B@' A? ' =' AC ' A1' D@ ! p? =>@' =?E' F@' =>C@@ J @?' G= ' = @? @E' A' I ' F@' D=C ?@C ' J @C@ ' = ' =' DC B= @' =>C@@ J @?' I@ G@@?' F@' A?@' D=C ?@C' =?E' F@' DC A?@C' @' G= ' A' C@ @ B@' =' F=C@' A1' F@' E6" ! > 6"' DCA1 ' A1' F@' A?@' D=C @C' =?E' ?A ' A1' F@' 2 "6 ' DCA1 ' A1' F@' 1 C J' =?E' F@C@1AC@' F@' J >F ' I@' > ' A1' @ J IuKK ?>' J A?@ ' C@ @ B@E' A?' I@F= 1' A1' F@' 1 C J' NGd A' GF@C@' =' DC A?@C' G= ' @ J D A @E' I ' F@' J = @C' A1' =' A= ' B@ @ ' GFA' @?' F J ' G F' =' =C>A' A1' A= ';' =?E' F@' A J ' A1' F@' C=E@' G= ' 1AC' F@' D@C A?' GFA' D@C ? @?E@E' F@' I ?@ ' A' C@ @ B@' GA F CE ' A1' F@' 1C@ >F ' =?E' F@' AG?@C' A?@ F CE;' F@' DC A?@C' AA<' F@ GFA @;' GF@C@ DA?' F@' G= ' ?E @E' =?E' A?B @E ' G= ' A IZ@ @E' F= ' F@' =?E' F@' ŸJ = @C' G@C@' ZA ? ' DCADC @ AC ' A1' F@' 1C@ >F ';' I ' =' =C>@' J =ZAC ' A1' F@' Z E>@ ' F@ E' F@' A?B A?' C >F ' 7?3

DA?' =?' ?E J @?' 1AC' @ J I@KK @ J @?' ' =DD@=C@E' F= ' F@' DC A?@C' @? @C@E' ? A' F@' 1A AG ?>' =>C@@ J @?' G F' F@' DCA @ AC' $ ` 7 ' & AC @ ' @?>=>@ ' A' =<@' F=C>@' A1' F@' > @ I@' =?E' A1' Fu' (@B ' ' ' ' =C<@' F ' G 1@' ?E@C =< ?>' F@' E= C ' DA C ' , ' = ' 1 1 @@?' F ?> ' =' G@@<' ' * F=@ J = ' =?E' =1 @CG=CE ' = ' =' = =C ' A1' ' =' @=C' =?E' =' F CE' A1' F@' @=C' =?? = ' DCA1 ' =1 @C' = ' @] D@? @ ' A1' C@? ' C= @' =IA C' =?E' ? @C@ ' A?' =D = ' , ' =C@' D= E' A?' =' 1= C' B= = A?' J =E@' 1CA J ' * F=@ J = ' A' * F=@ J = ' FC@@' J A? F H ?A @' A?' @ F@C' E@' A' I@' > B@?' ;' = ' F@' @] D C= A?' A1' GF F' J @' F@' A =>@' A' I@' B= = @E' I ' ' & AC @ ' GFA' A D @ ' ' = ' I = 11' ?' =EE A?' A' F ' = =C ' * =C F' - F' 98

ÁC&' &' &' / 3 !
Ó ' ' S

F@' DC A?@C' G= ' A?B @E' A1' @ J I@KK ?>' J A?@ ' C@ @ B@E' ?' F@' A C @' A1' F@' I ?@ ' =CC @E' A?' ?E@C' F ' =>C@@ J @?' ' =?E' A?' =' = @' C@ @CB@E ' ACE' = J D I@ ' ' ' =1 @C' =C> J @?' ' A?' F@' D=C ' A1

W(Ú' /V' ' 2)) '=' ' +#*/#' ' 3(/' ' b
+' :' ' ' ' .IA ' '2' # ; 2<=' 3 : ' 1 4/ :' 3# 9+ ; P
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I @ CAG?A? F E@ B@C@EZ E>J @? $ 7 =JA1AD ? A? F= F A?B A?A >F A F@ DDAC @E F@ b @ A? E E F ? C J @? C@= @ =D=C ?@C F D AC E E C@= @ F@ C@ = A? A1 J = @C =?E @CB=? V E E ?A C@= @ =AJ J ? A1 DCA1 =?E A ; ! " F@ DCA @ AC =?E F@ DC A?@C G@C@ ?A D=C ?@C ; = E =J A1 AD ? A? F= F@ DC A?@C G= = IA C@C =?E ?A = D=C ?@C H 7'3

1+=9 /((/P 1/ J) +4 & (=4 +=+*+(#' +' ' +&4/(7+(: ' +: : 4 2 +' "/(1/'4+)/ 2'

I ?'4J 4 F@ = @CB=? H

F@ DCA @ AC =CC @E A?I ?@ = J , 1= C@C = = D =?E = * =? F@ @C = AJ J A? =>@? ? A A? A F =?E =C?H GF@C@ F@ A E F@ C AG?>AAE J =? 1= C@E = = D F@ DC A?@C G= ? F@ C @CB @ ? F@ * =? F@ @C I ?@ = A= F @C =?E A @ AC H =?E A?@ & =J A?G= F@ C = @ J =?' ?

DC A?@C =?E & =J A?=DD @E A F=B@ F@ C =C @ H GF F G@C@ 8 _ = @=C @= F H ? C@= @E ; D?E = @?> F F@ DCA @ AC =>C@@E A = AG @= F A1 F@J -g D@C @? H A? F@ DCA1 H ?=EE A? A F@ C = =C @ H =?E G= D = @E F= 1 F@ A? @C? FA E I@ = A ?> A?@ ?=? @=C H ?@ F@C A1 F@J G@C@ A A? C I @ =? F ?> AG=CE F@ A H I F@ FA E I@ A? @? G F F@ C = =C @ " A?@ A1 F@ @ D=C @ ? @?E@E A = @C H ?AC D A F@ J @ A1 F@ DC A?@CH =DDC@F@? A? E E =? A1 F@J DDA @ F= F@ F=E = @C@E I F =CC=?>@J @? F@ C@ = A? A1 J = @C =?E @CB=? GF F F=E DC@B A @] @E I@ G@@? F@ DCA @ AC =?E F@ DC A?@C =?E & =J A? 1 @C F =CC=?>@J @? F@ DC A?@C =?E & =J A? A? ? @E A E T F=C>@ F@ =J@ E @ =JE A FA E F@ =J@ DA A? @= F A1 F@J F=E EA?@ I@1AC@H =?E ?@ F@C A1 F@J F=EH=? A? CA AB@C F@ ?==?=>@J @? A1 F@ I ?@ JA?> F@ D= J @? GF F F@ DC A?@C = = @C F=E A J =<@ G@C@ F@ G=>@ =?E = =C @ A1 @CB=? H =?E ?F = A ? F@ C@E @E F J @ 1 @B@C J A? F G F F@ D= J @? A1 F AG?= =C =JA?> F@ C@ H = F@ F=E EA?@ I@1AC@ F@ @?E A1 F@ 1 C @=C =1 @C F =CC=?>@J @? I@ DCA @ AC DCADA @E A F@ DC A?@C =?E & =J A? A @=B@ G F F@J = DAC A? A1 F@ DCA1 F@ F=E A C@ @ B@H =?E F= F@ D A @ AC GA E = AG . D@C @? H DA? ; =?E = F@ @?E A1 F@ ?@] @=C F@ @= F 1 . q G F F@ DCA @ AC H F@ =>C@@ ?> A D= F@J . D@C @? H 1AC H F@ J @?I@ ?> = I@C A EC=G A = = =? J @H 1 F@ FA >F F@ A E = A EC=G A = = =? J @H 1 F@ FA >F F@ A E = A J AC@ =EB=? =>@ G= =1 @CG=CE ? C@= @E H =?E = Fp J@ A1 F@ C = F@ DC A?@C =?E & =J A? F=E @= F - ? F@ F=?E A1 F@ DCA @ AC H 1AC GF F F@ G@C@ @? @E A C@ @ B@ . D@C @? H A A?> = C@J = ?@E F@C@ . D@C @? H G= F@ ? @C@ G F GF F F@ DCA @ AC E@I @E F@ A? @C? A? F@ =D = @JD A @E I F@J ? ; F@C@ ?@B@C G= =?= = A ? =? @=C ; I ? 9 =>C@= J =? I=E E@I G@C@ J=E@H =?E = F@ @?E A1 F= @=C F@ DCA1 G@C@ B@C C 1 ?> H =?E F@ DCA @T AC H ? A? E@C= A? A1 F= H J=E@ A F@ DC A?@C =?E & =J A? =E DC@ @? ? =EE A? A F@ C = =C @ F@ Z C 1A ?E F= F@ DC A?@C G= = @CB=? G F ?' F@ J @=? ?> A1 F@ = @H N. , 9 @A : H ' : . d ?E H A? = = @ C@ @CB@E A? F@ b @ A? GF@ F@C F@ G@C@ G=CC=? @E ? A 1 ?E ?> H G= F@ E F= F@ G@C@ $ 1AC H = FA >F F@C@ J >F I@ = D=C ?@C F D >46# F CE D@C A? H F@C@ G= ?A?@ ! " 4 = A ! < DC A?@C A F@ D!? J @ 1 A F J = @C H DCAD@C 1 3

MWD /) ' 2(49# G /' ' HHH WJD /) X 2'+*: EA

Z E>@ %' DA ' =' = @' C@ @CB@E%' F@ E' F= ' F ' A?B A?' G=
( )94 ' R B

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G F' F@' D C F= @C ' GA' 1 C< ? ' A1' I @C%'X1AC' GF F' F@' G= ' D= E'
I ' ?@B@C' = A ? @E ' = F' D@C A?' A' GFAJ' F@' E@ B@ !@E' I @C'
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A @ @E‘ @‘ = J ‘ ?‘ =‘ D = @‘ 1CA J‘ F@‘ @B@C=‘ A J J ? =? %‘ =?E‘ F@?‘ AA<‘ F@‘ D = @‘ A‘ F@‘ = =C%‘ =?E‘ E@ B@C@E‘ ‘ A‘ * C‘ & JA %‘ YGFA‘ F@?‘ D ‘ ?‘ F ‘ AG?‘ EA?= A?‘ $ =?E‘ F@‘ DC A?@C‘ D C A ?@E‘ GA‘ F= 1 CAG?‘ D @ @ ‘ 1CA J‘ F@‘ D = @%‘ =?E‘ @ C@ @E‘ F@ J‘ ?‘ F ‘ DA <@‘ 1AC‘ F ‘ AG?‘ @‘ ;‘ =?E%‘ DA?‘ =‘ = @‘ C@ @CB@E%‘ F@‘ Z E>@ ‘ G@C@‘ A1‘ AD ? A?‘ F= ‘ F@‘ DC A?@C‘ G= ‘ ?A ‘ F@‘ @CB=? ‘ A1‘ =? ‘ A1‘ F@‘ D@C A? ‘ = @>@E‘ ?‘ F@‘ ?E J @? ‘ NVd

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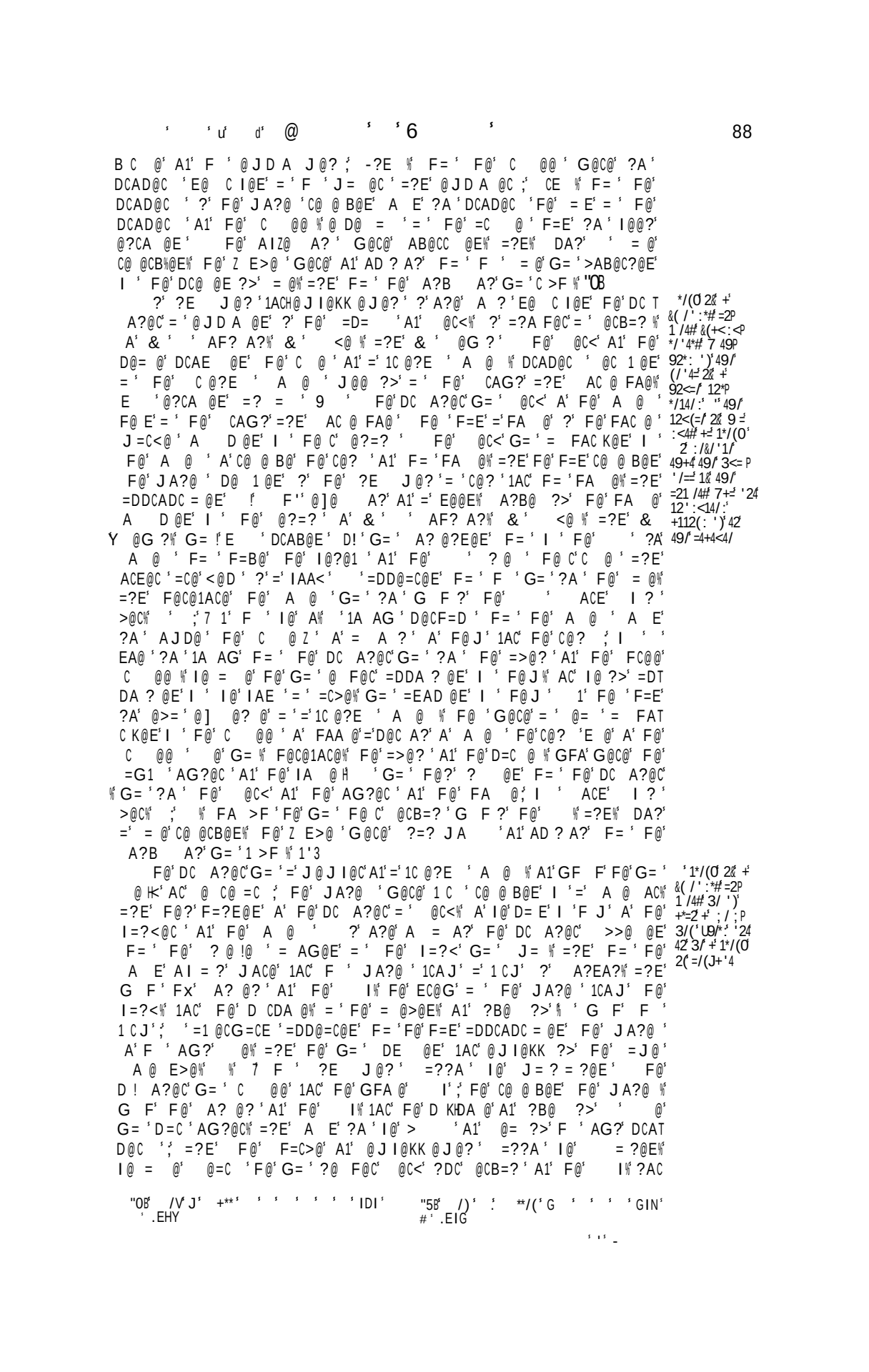
DA?‘ =?‘ ?E J @? ‘ 1AC‘ @ J I@KK @ J @? %‘ ‘ =DD@=C@E‘ F= ‘ =‘ 1=C J @C‘ F=E‘ A J @‘ I@= ‘ ?‘ J F1 @ E%‘ GF F‘ F@‘ DC A?@C‘ G= ‘ <@@D ?>‘ 1AC

" B‘ /V‘ 3‘ <(42 ‘ ‘ ‘ ‘ ‘ ‘ ‘ ‘ ‘ EHD GAN‘ 9/‘ /12(: /(‘ 492<) 9‘ 49+4‘ 49/‘ "(=2 ‘ /(‘ 7+=‘ "/(&/14*# &(//‘ 42‘ 9+J/‘ (/P &<=/ :‘ %2 (/1/ J/‘ 49/‘ : 2 ‘ /#‘ 7 492<‘ +‘ ‘ # J 2*+4 2 ‘’ 2& :<4#‘ / 49/(‘ 42‘ *+: /=‘ 2(‘ 49/‘ 12 ; ; 44/ /‘ + ‘ :‘ +*=2‘ + : J/(4/ :‘ 42‘ 49/(/ 3/ ‘)‘ ‘ 2‘ (/ ; < ‘ / (+4 2 ‘’ 12 ‘ 4(+14/ :‘ &2(‘ 2(/V" /14/ :‘ 2(‘ "(2 ; =/ :‘ 42‘ 49/‘ "(=2 ‘ /(W] B /) ‘ ‘ ! 22 : 32 : # ‘ E ‘ ‘ YYA‘ 44*/ : +*/ ‘ ‘ + ‘ :‘ +(0/ ‘ ‘ / /‘ 49 =‘ 1+=/‘ =4+4/ :‘ +4‘ */ ‘) 49 ‘ ‘ :‘ "‘ H. N‘ + ‘ :‘ =/ /‘ 7 ‘ :" ‘ .HA‘ +=‘ 42‘ +‘ 3+ */ /‘ 3/ ‘)‘) < *4# 2&*+(1/ ‘ #‘

?' = @' F@' J =?=>@C' A1' F@' E= 'G= ' D= ? E=I 'DC@B@? @E' 1CAJ' = @?E ?>%' =?E' ?=I @' A'1 ?E' =' I @%' F@' @C<' J >F '= '1AC' F J ' DA?' F@' = E' J =?=>@CH' C@ DA? I ' A' F@' ? A?' F@C@' G@C@' =IA ' - ' J =?=>@C ' AB@C' =?E' =IAB@' F@' C @@ %' D= C ? %' =?E' DC@ E@? %' GFA' G@C@' J =?=>@C ' ?'4*! !4 ' F@' @C<' G= ' @ @ @E' @B@C ' @=C'F ' I= A '= ' =% J @@ ?>' A1' F@' J=?=>@C %' = ' GF F' J @@ ?>%' 1' ?A' C= @@ ' = @?E@E%' F@' =DDA ? J @?' ' I ' F@' A F@C' J =?=>@C ' GA E' I@'>AAE';' AC' '1' ?A' J =?=>@C ' = @?E@E%' F@' =DDA ? J @?' ' I ' F@' C @@ ' GA E' I@' @b = ' >AAE' F@' J =?=>@C' A1' F@' E= 'G= ' =I @?' = ' F@' J A J @?' ' ='E@DA AC' @? @C@E' F@' I =?<' =?E' D= E' F@' J A?@ %' GF F' F@' DC A?@C' =DDCADC = @E' A' F ' AG?' @' ' G= ' AIZ@ @E%' %' F= ' F@' DC A?@C' G= ' ?A' @C<' A' F@' C @@ %' I ' A' F@' J =?=>@C ';' -?E %' 1' F@' GACE' 7A F@C 'H J >F ' ? E@' F@' J =?=>@C %' F= ' F@' J A?@ ' G= ' ?A' C@ @ B@E' A' F@ C' @%' I ' A' F@' @' A1' F@' C @@ %' ?' GFA J' = A?@' 'G= ' B@ @E' I ' F@' ' @A' :%' %' -%' ' 9';' =?E%' = %' F= ' F@' @C<' F=E' ?A' = FAC ' A' C@ @ B@' F@' J A?@ %' 1AC' F@' =?E' =' J =?=>@C' A >F ' A' F=B@' C@ @ B@E' ' A>@ F@C ' ' 'G= ' F@ E%' DA?' =' = @' C@ @CB@E'' F= ' F@' DC A?@C' G= ' DCAD@C 'E@ C I@E' =' @C<' A' F@' C @@ %' =?E' F= ' F@' ADB A?' G= ' >AAE%' 153

' ; / ; 3/(' 2& +' 21 /4#' ; +# 3/' =4+4/ :' 42' 3/' 49/' =/ (J+ '4' 2& 49/' 4(<=4/ /= ' ++ :' 49/' ; 2 ' /# ; +# 3/' =4/4/ :' 42' 3/' 49/ (' "(2" /(4#' 492<) 9' 49/' =21 /4#' 9/' '24' / '(2**/ :

DA?' =?' ?E J @?' 1AC' @J I@KK ?>' F@' J A? @ 'A1' =CI@C%' T DAC %' =?E' = A <%' '=DD@=C@E' F= ' F@' DC A?@C' &=' @ C@ =C '=?E' @C<' A' =' A @ 'F@ E' = ' F ' FA @%' = @E' !' F@' ?@' ?EC@E' 5A ?E '=?E' 1 '5A ?E ' A @ %H=?E' =' J @ J I@C' A1' F@' A @ ' F@' =C @ 'A1' F@' A @ 'G@C@' ?A '@?CA @E' ' F@'1 C '=C @' F@' J @ J I@C 'G@C@' A'D= ' F@ C' J A? @ ' A' F@' @G=CE '1AC' F@' J @' F@ >%' GF F' G@C@' A' I@' D= E' I ' F@' @C<' =?E' A?@' A1' F@' @G=CE ' ? A' F@' I=?<' A1' F@' * @ C ' GAAE %' = ' C@= C@C ' A' F@' A @ ' =CI@C%' DAC %' =?E' = A <' G@C@' F@' C @@ ' A1' F@' A @ ' GA' @G=CE 'F=E' I@@?' C@> =C '=DDA ? @E' 1CA J' J @' A' J @' 1CA J' F@' AJ J @? @J @? 'A1' F@' A @ ' 'G F ?' =' 1@G' J A? F ' I@1AC@' DC %' 9 :';' I '?A' @G=CE 'F=E' I@@?' =DDA ? @E' ?' F@' @=C' 9 :%' F@' DC A?@C' F=B ?>' ?@> @ @E' A' J J A?' F@' AJ J @@' = 'FA' A >F ' A' F=B@' EA?@%' = ACE ?>' A' I ' E ' "A' J A?@ 'G= ' C@T @ B=I @' 1CA J' F@' J @J I@C %' = A !E ?>' A' F@' C@> = A? ' A1' F@' A @ %' @] @D ' DA?' I' ? >F ';' =?E' GF@?' F@C@' G@C@' @G=CE %' F@' A C @' A1' I ?@ 'G= '1AC' F@' J @J I@C ' A' D= ' F@ C' A? C I T A? ' A' F@' Z ? AC' @G=CE%' =?E' 1AC' F J' A' F=?E' 'AB@C' A' F@' @ C@ =C %' GFA' AA<' =?' = A ? ' A1' '=?E' J =E@' =?' @? C %' =?E' F@?' =CC @E' F@' J A?@ %' = A J D=? @E' I ' A?@' A1' F@' @G=CE %' A' F@' F=?<';' A?@' @? C 'A? 'A1' F@' =J A ? 'G= ' J =E@' I ' F@' @ C@ =C %' >? 1 ?>' I A F' F@' J A?@ 'C@ @ B@E' 1CA J' F@' J @J I@C ' =?E' D= E' ? A' F@' I=?<' F@' A? ' = A ? ' <@D ' = ' F@' I=?<' AAE' ?' F@' ?= J @ 'A1' F@' C @@ ' # C ?>' F@' J @' F@C@' G@C@' ?A' @G=CE %' F@' @ C@ =C 'F=E' I@@?' ?' F@' F=I 'A1' C@ @ B ?>' F@' J A?@ '1CA J' F@' J @J I@C 'A?' F@' I' ? >F %' =?E' =CC ?>' ' A' F@' I=?<' ?' F@' 9 F' A1' DC %' 9 :%' I@ ?>' A?@' A1' F@' I' ? >F %' F@' DC A?@C' C@ @ B@E' 1CA J' F@' J @J I@C 'A1' F@' A @ ' F@' J' A1' : ' ':E%' =?E' J =E@' =?' @? C 'A1' ' ?' F@' = 'G= ';' A1' F ' J' F@' D= E' ? A' F@' I=?<' . ' + ' E' A? %' =?E' @J I@KK @E' F@' C@J = ?E@C%' ' ' E' 'G= 'AIZ@ @E%' %' F= ' = ' ?A' @G=CE 'F=E' I@@?' =DDA ? @E%' F@' J A?@ 'F=E' ?A 'I@@?' C@ @ B@E' I ' F@' DC A?@C' I



E E' F@' C@ @ B@' F@' J A?@ ' = ' F% I ' = ' =' D=C ?@C% =?E% F@C@1AC@% = ' =?' AG?@C H 183

' =/1(/4+(# +' :' 4(/+=<(/(' 2& +' &(/ ' :'# =21 /4# +1P 12<' 4/ :' 12(P (/14*# +4 +' T<+(4/(' :+# &2(' 49/' + ; 2<' 4 2& ; 2' /# '" ' 9 =' 9+' :=' +' :' +&4/(7+(:=' +3=12' : / :? 9/*:' 49+4 9/' 7+=' ' : 14+3*/' &2(' / ; 3/aa* ')' 49+4 + ; 2<' 4

DA?' =?' ?E J @?' =>= ? ' F@' DC A?@C' 1AC' @J I@KK ?>' ' 8 7 9# ' = ' @C<' A' F@' (@B ' ' * = F@G' =?E' A F@C % ' =DT D@=C@E' F= ' F@' DC A?@C' G= ' @ C@ =C ' =?E' C@= C@C' A1' =' 1C @?E ' A @ % =?E% GF ' = ?>' ?' F' =D= @ % C@ @ B@E' F@' I C DT A? ' A1' F@' J @J I@C ' * C ' * = F@G' =?E' GA' A F@C ' G@C@' F@' C @@ % =?E' I ' =' C @' A1' F@' A @ ' = ' J A?@ ' G@C@' B@ @E' ?' F@ J ' = ' C @@ ' Fp' = A ? ' G@C@' = E @E' =?E' @ @E' b =CT @C % =?E' F@' . F' A1' @D @ J I@C' G= ' A?@' A1' F@' b =C @C' E= ' ' E= FAA<' =?E' @E>@C' G@C@' <@D ' I ' F@' DC A?@C ' F@' I C D AI ' C@C@' @? @C@E' ?' F@' E= IAA<' = ' F@' J @' F@ ' G@C@' D= E% =?E' F@ @% = ' G@ ' = ' F@' E I C @J @? ' F@ @A % G@C@% = ' F@f @?E' A1' @= F' b =C @C% C=? 1@CC@E' A' F@' @E>@C% =?E' =' I= =? @' C <' = ' F@' 1AA ' A1' F@' = A ? % FAG ?>' F@' @=C' I= =? @' ?' F@' F=?E ' A1' F@' DC A?@C% =?E' ' 8 ' 9# ' G= ' F@' @=C' I= =? @' A?' F@' . F' A1' @D @ J I@C ' F@' DC A?@C' E E' ?A ' IC ?>' 1ACG=CE' F ' C@ @ D ' I@ G@@?' F= ' E= ' =?E' F@' ?@] ' b =C @C' E= ' ? A' F@' @E>@C ' 1' =? ' CD ' C@ J = ?@E' ?' F@' F=?E ' A1' F@' @ C@ =C ' =?E' C@= C@C% G= ' E C I =I @' I@1AC@' FC J = ' ?' @= F' @=C% =?E' ' G= ' F@' E ' A1' F@' DC A?@C' A' F=B@' F' CD ' C@=E ' A' I@' D= E' AB@C' GF@?' C@b C@E' A' EA' A' FAC ' =1 @C' F@' J @@ ?>' A1' F@' A @ % A?' F@' 9 F' A1' # @ @ J I@C% DC@D=C= AC ' A' F@' E C I A?' A1' F@' CD % F@' DC A?@C' E =DD@=C@E' G F' F@' 1 ?E ' A1' F@' A @ ' ' G= ' A? @?E@E% % F= ' F@' DC A?@C% F=B ?>' 1= C ' = A ? @E' A?' F@' . F' A1' @D @ J I@C% A E' ?A ' I@' > ' A1' @ J I@KK @ J @?' ' ; -?E % F= ' =1 @C' F@' . F' A1' @D @ J I@C' F@' J A?@ ' C@ J = ?@E% ?' F@' DC A?@CH ' F=?E ' = ' C@= C@C% =?E' F= ' F@' C@ = A? F D' A1' @C<' A' F@' C @@ ' E E' ?A ' F@?' @ ' % 163' =?E' F= ' F@' = A ? ?>' F=?>@E' F@' F=C= @C' A1' F@' DA @ A?' ; CE % F= ' F@' DC A?@C' G= ' =' D=C ' AG?@C ' ' &= ' F@ E% A?' =' = @' C@ @CB@E% F= ' F@' DC A?@C' G= ' > ' A1' @? I@KK @ J @? ' ' G= ' J J = @C = ' A' A?T E@C' GF@ F@C' F@' 1 @E' F@' A11 @' A1' @ C@ =C ' AC' C@= C@C% AC' IA F% à I@ = @' ' =DD@= @E' Fb ' F@' G= ' @ J D A @E' A' A @ ' F@' I C DT A? % =?E' A?' F@' 1= @' A1' F ' = A ? ' F@' I= =? @ A1' ' ' +# ' C@ J = ?@E' ?' F ' F=?E % =?E' ' G= ' F ' E ' ' <@@D' =? ' CD % =?E' F=B@' ' C@=E ' 1AC' E C I A?' GF@?' C@b C@E' A' EA' A' F= ' F ' E @ ' = ' @C ' E E' ?A ' @= @' GF@?' F@' I= =? @' A1' F@' = A ? ' &!= ' C <' G F@' G= ' @C<' GF@?' F@' C@ @ B@E' F@' J A?@ % =?E' F@' G= ' @C<' GF@?' F@' =I A?E@E' ; =?E% = % F= ' F@' DC A?@C' G= ' ?A ' @? @E' A' =? ' ? @C@ ' ?' F@' 1 ?E % A' = ' A' DC@B@? ' F J' 1CA?' I@ ?>' > ' A1' F@' A11@? @% 1:3

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F@' DC A?@C' G= ' ?E @E' = ' @C<' =?E' @CB=? ' A1' ' # @=?' =?E' A F@C ' 1AC' @ J I@KK ?>' F@ C' J A?@ ' # @=?% F@' DC A?@C% =?E' J=? ' A F@C ' G@C@' J @ J I@C ' A1' 7 F@' ? @E' 6 @? F' CA F@C ' @?@1 ' A @ %H =?E' F@' DC A?@C' G= ' @ J D A @E' = ' @ C@ =C % =?E' F

Wab' /) ' ' + 4/ ' G' 2V' ' ' G.A' ' .EID' 2' +<492(4# 7+=' 9/(/' (/P &/(((/ :' 42' //' ' 27' H.' ' HG' /4 ' 1' **& ' =' ' S ' ' AT.' ' 24/' " B " B' 4' 7+=' =+ :' 49+4' 49/' 2&& 1/' 2&' =/1(/' 4+(# 7+=' +*2 ' /' ; / ' 4 2 ' / :' ' ' 49/' (<*/=' +' :' < 4' &2(' 49/' 2h 1/' 2& 4(/+=<(/(' 49)' " (P =2 ' / (' (/1/ J/ :' ' 2' "+# " B' X 3' ' <("9#' I' 2V' ' ' * *

L/3' .EYM' 4' =' =+ :' 49+4' 49/' 4(<=4/ /=' 9+:' ' 2' "27 /(' 3# 49/' (<*/=' 42' : = ; ==' 49/' " (=2 ' /(' +' :' ++49/' .M ! /2 ' I ' 1' AY' =' 6/&/(((/ :' 42' 4' ; +# 3/' '&/(((/ :' 49+4' 49/' =21 /4# 7+=' / ' (2**/ :' ? 3<4' 49/=/' +(/' ' 24 =4+4/ :' +=' &+14=' ' ' 49/' 1+=/ ' 9 = 1+=/' 7+=' : /1 : /:' ' ' (/*+' : ' //' ' &' #(//' ' " ' HHY

F = F@ F=E C@ @ B@E F@ JA?@ =?E G= G ?> A C@D= F@ =JA ? I ? = J@? G= AIZ@ @E F= F G= J@C@ =I C@= F A1 C I F@ AIZ@ A? G= AB@CC @E ; =?E 4 = @ C@ @CB@E F@ A?B A? G= F@ E C >F 1#3

F@ #A? = @C 5@CJ=?@? @?@1 E ?> =?E ?B@ J@? A @ G= E @?CA @E =?E C @ @C 1@E AIZ@ G= A @?=I @ J@JI@C A AI = ? 1CAJ A=? F G= A1 JAC >=>@ A? F@ C C@= DCAD@C @= F J@JI@C^ A? C I ?> =?? = @? F ?> 1AC 1A C @@? @=C =?E F=B ?> C@E A F@=JA ? IT C I@E A? D= ?> A11 F JAC >=>@ F@ DC A?@C G= F@ @ C@ =C =?E A? D= E A11 @C A1 F@ A @ =?E F@ J=?=>@J@? A1 F@ =11= C A1 F@ A @ G@C@ @1 = JA @? C@ A F J F@ A C @ A1 I ?@ = DC@ C I@E I F@ C @ F=E ?A I@@? C =ET F@C@E A F@ I C D A? G@C@ ?A = G= C@ @B@E F F@ @G=CE I 1C@b @? I F@ DC A?@C GFA = A J=E@ @? C @ ? F@ @G= HE H IAA< F@ JAC >=>@ G@C@ = G= J=E@ A F@ C @@ I GF@? C@E@@J@E F@ JA?@ G= D= E A F@ DC A?@C = @ C@ =C I 1AC =?E DA? C@ @ D >?@E I F@ C @@ JAC >=>@ 1AC + # G= D= E A11 =?E F= J D= E A F@ DC A?@C =?E F@ @JI@KK @E " A?@ A1 F@ C @@ G@C@ DC@ @? = F@ J@ G= ?A D=C A1 F@ E A1 F@ @ C@ =C = E@1 ?@E F F@ C @ A C@ @ B@ F@ J A1 JA?@ D= E A C@E@@J JAC >=>@ I G= F@ E A1 F@ E C@ AC A EA A G= AIZ@ @E F= F@ DC A?@C A E ?A F@ = E A Fu F@ @CB=? A1 F@ C @@ = G= =?E F F@ DC A?@C C@ @ B@E F@ JA?@ I B C @ A1 F @JD A J@? = F ; I 6@= ?> F@ E F= F@ = = A C @ A1 I ?@ = DCAB@E FA >F ?A ? C = ACE=? @G F F@ C @ G= @B E@? @ 1AC F@ Z C F= F@ DC A?@C C@ @ B@E F@ JA?@ I B C @ A1 F @JD A J@? = F@ CB=? A F@ C @@ =?E F@ Z C 1A ?E F= F@ E E A C@ @ B@ ; =?E AF = @ C@ @CB@E G= F@ E F= F@C@ G= @B E@? @ 1CAJ GF F F@ Z C J >F ?1@C F= F@ DC A?@C G= @JD A @E I F@ C @@ A C@ @ B@ F@ JA?@ ; 1AC = FA >F F@ G= @ C@ =C =?E = F F=E F E @ DA ? @E A I F@ C @ @ F@ J >F = A F=B@ F=E A F@C E @ = @C< A F@ C @@ ; =?E GF @ F@ A?@ @ A1 E @ GA E E@D@?E A? F@ C @ F@ A F@C GA E I@ = @C = ?@E I F@ = = A C @ A1 I ?@ F@ C @@ J >F F=B@ @JD A @E =? A F@C D@C A? A C@ @ B@ F@ JA?@ 1AC F@J =?E F@C@ F@C@ G= @B E@? @ F= F@ DC A?@C G= A @JD A @E I F@J C=F E @ = @ C@ =C 1 3

?= ?= ?E J@? 1AC @JI@KK @J@? =DD@=C@E F= F@ DC T A?@C G= @ C@ =C A1 = JA?@ I =?E F@ H @ A1 F@ I =DDA ? @E F J @ C@ =C =?E DCAB E@E F= F@ 7 F= C@ @ B@ 1AC F @CB @ = 1= C C@J ?@C= A? A I@ E@ E@E I F@ J@JI@C H , =?E 7 F= J =<@ F@ DCAJ ACv ?A @ A? E@J=?E =?E F= G= F@ A?@ A1 F@ AJJ @@ H 7 F@b @ AC ACE@C DA? F@ C@= C@C A I@ A ? @C >?@E I F@ @ C@ =C H ?E A?@ & F @ G= A = = C @@ =?E A >? = ACE@C DA? F@ C@= C@C 1AC D= J@? =?E F@ G= = A E@D C@= C@C F@C@ G@C@ GA @G=CE =?E F@ DC= @ A1 F@ I G= 1AC F@ @G=CE A C@ @ B@ D= J@? A1 J@JI@C =?E A D= F@J AB@C

" B (m/) (2<; D ND // ; 14 ; / 4 7+ < : /(49/ D I E !/2) 3 # (// " HHY T.)G W/ /) +=4 / GYN 9/

" 2& 1/ 2& + =21 /4# 792=/ :<4 / +(/ ="/1 & / : 3# 4= (<*/= ; +# /J/(49/*/= 9+J/ 249/(:<4 / +(=) &(2 ; 49 12<(=/ 2& 49/ 3<= / = 2& 49/ =21 /4# +) < *4# 2& 2 ; 3/aa*) ; 2 /# (/ 1/ J/ : 49/ /V/1<4 2 2& 49/ +44/(:<4 /=

9/ =/1(/4+(x 2& + ; 2 /# 1*<3 7+ : (/14/ : 3# 49/ 1*<3 42 =</ 2 + 24/ 3/*2)P) 42 49/ 1*<3 + : < : /(49/ "+(4 1 *+(1 (P 1< ; =4+ 1/ 9/ 7+ 9/* :)< *4# 2& / ; / ; 3/aa*/ ; / 4

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admitted into it, had an oath administered to them, which was clearly an unlawful oath within the 39 Geo. 3, c. 79, and 57 Geo. 3, c. 19, s. 25; and it was held that the prisoner could not be convicted of embezzling the money of this society. (*w*)

SEC. III.

Decisions on Repealed Statutes as to receipt by Clerk or Servant.

A prisoner might be guilty of embezzlement if he received money on account of his master, though he received it in the name of another person.

Upon an indictment for embezzling monies received for, in the name, and on account of Charles Hardy, it appeared that Hardy was agent for the Great Northern Railway Company for the purpose of carrying out goods; he employed his own servants, drays, and horses, and was answerable to the company for monies collected by his servants for carriage of goods. The prisoner was his servant, and it was his duty to go out with a dray, and take goods and a delivery-book handed to him by J. Esplin, a clerk of the company, and to deliver the goods according to the directions contained in that book, and to receive the amount of carriage therein specified as due to the company, and then to account for the sums so received to J. Esplin. He had taken out goods at the times specified in the indictment, and received for the carriage due to the company the sums stated in the said book, which sums were paid to him, and received by him, as due to the company, and the receipts for which were given by the prisoner, and made out in the name of the company. The prisoner appropriated these sums, and Hardy paid the amount to J. Esplin on account of the company, in pursuance of his arrangement with them in that behalf. It was objected that the prisoner received the monies not for, in the name, and on the account of Hardy, but of the company; but, upon a case reserved, it was held that, although the prisoner received the money in the name of the company, he received it on the account of his master; for the words of the Act are 'for *or* in the name *or* on the account of his master.' (*x*)

By virtue of the employment.

It is unnecessary to refer at any length to the cases decided under the repealed acts as to receiving money by virtue of the employment, as the words "by virtue of such employment" in the repealed enactments are, as noticed *ante*, p. 333, not in the present clause.

Receiving immediately from a customer that which in the ordinary course the servant would have received through the medium of another servant employed to collect from customers, was held to be a receipt by virtue of the employment of the servant, who so received immediately from the customer, in a case where the servant, being intrusted to receive at home from out-door collectors, received abroad from an out-door customer. (*y*)

It was also decided upon the repealed statute, that where a ser-

(*w*) Reg. *v.* Hunt, 8 C. & P. 642. Mirehouse, C. S., after consulting Bosanquet and Coleridge, JJ. See R. *v.* Stainer, *ante*, p. 338.

(*x*) Reg. *v.* Thorpe, D. & B. 562.

(*y*) Rex *v.* Becchey, MS. Bayley, J., and R. & R. 319.

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the company. If there be such privity as to make the carman the agent of the company in receiving the money, and he agreed to pay it to them, the money in his hands was not the money of the master but of the company. The opinion of the majority of us is, that such privity is established, and therefore that the money was not received on account of the prosecutor, but on account of the company. That being so, this conviction cannot be supported.' (*c*)

The 39 Geo. 3, was held to apply to a servant who embezzled money received from a customer, to whom his master had given it for the purpose of trying the servant's honesty.

The indictment charged the prisoner, as a servant of one J. Gregory, with receiving the sum of seven shillings from one Hannah Morris, for and on account of his master, and embezzling the same. It appeared that Gregory, who was a potato-merchant, having reason to suspect the prisoner of dishonesty, procured Morris to come to his shop with a marked seven-shilling piece of his own money, there to purchase potatoes, and to pay for them with the seven-shilling piece. She came accordingly, bought potatoes to the amount of one shilling and three pence, and paid the marked seven-shilling piece to the prisoner, who gave her out of his own pocket five shillings and nine pence in change, though he might have given the change out of monies belonging to his master which had been left in the counting-house for that purpose. The seven-shilling piece was afterwards found secreted in the prisoner's box. It was contended that the Act applied only to cases where the monies had been paid to the servant by other persons than the master, and not, as in this case, where the monies had come intermediately from the hand of the master: but the court was perfectly satisfied that there was nothing in the objection, and that if a servant received the money, either from the master, or from a third person on the master's account, it was sufficient. (*d*)

The prisoner was indicted for embezzling three shillings, the property of his masters, J. Clarke and J. Gyles. Messrs. Clarke and Gyles, whom the prisoner served in the capacity of shopman, having reason to suspect that he embezzled some of the monies received by him in the shop, Mr. Gyles formed a plan for detecting him, and took an account of the money at that time in the till, and marked it; and then went to the house of a neighbour where he took three shillings from his pocket, marked them also, and then gave them to his neighbour's servant, who by his desire, and also by the order of her mistress, went with them to the shop of Messrs. Clarke and Gyles, and purchased of the prisoner, who was then serving in the shop, articles exactly amounting to three shillings, and paid for them with the three shillings given her by Mr. Gyles. The prisoner embezzled these three shillings. It was submitted that, as the three marked shillings were the property of the prosecutors, and had been

(*c*) Reg. *v.* Beaumont, Dears. C. C. 270. By the terms of the contract Wiggins undertook to 'provide a sufficient number of steady and honest earmen, and other persons, for the delivery of all coals,' &c., 'and also for collecting and receiving, and duly accounting for, the monies received for the same,' &c., and that 'the parties, whilst in the employment of Wiggins, shall obey, in all things connected with the delivery of coals and the receipt and payment of monies received by them, the orders of the company's coal manager, or such other person as may be appointed by them.' This contract was not set out in the case, but cited in the argument.

(*d*) Whittingham's case, 2 Leach, 912. *Sed quære* the correctness of this decision. C. S. G. ; and see Reg. *v.* Hawkins, 1 Den. C. C. 584, where the dictum at the end of this case is questioned.

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entered by him in the order book as for the pickles only. An invoice for the pickles, pursuant to the entry, was made out by the prosecutor's brother, and given to Michael, but he delivered the pickles and fourteen pounds of treacle. The sum charged for the pickles was 6*s.* 6*d.*, and Michael entered the treacle at the foot of the invoice at 4*s.* 6*d.* Edmund afterwards received the whole amount, but paid the prosecutor 6*s.* 6*d.* only. Mr. Recorder Law (after consulting Patteson, J.) held that this was not embezzlement but larceny, saying 'Edmund does not receive the 4*s.* 6*d.* for or on account of his master, but contrary to and in breach of his duty towards that master. I may also liken the case to that of two servants, one of whom has authority to sell, and the other not, but merely to receive money; if the one, who has no authority to sell, introduces himself behind the counter, and sells his master's goods, putting the money into his own pocket, that is clearly a stealing, for he sells and receives the money contrary to his authority; and he cannot be said to have been employed or intrusted as clerk and servant, and to have received the money by virtue of such employment, where the act is done contrary to such employment. Here the servant having authority to send out goods to the amount of 6*s.* 6*d.* puts up goods to the amount of 11*s.*, his intention being to put 4*s.* 6*d.* (*j*) into his own pocket. The time never arrives when he receives that on account of his master, for all that he does is adverse to, and in fraud of, the interest of the master.' (*k*)

A miller of a county gaol grinding corn contrary to his duty, and appropriating the money received for the grinding, was held not to have received the money by virtue of his employment.

Upon an indictment for embezzlement, which in some counts alleged the prisoner to be the servant of the inhabitants of the county of Worcester, and in others of the clerk of the peace for that county and others, it appeared that the prisoner was the miller of a mill in the gaol of the county, and it was his duty to direct any person bringing grain to be ground at the mill to obtain at the porter's lodge at the gaol a ticket specifying the quantity of grain brought. The ticket was his order for receiving the grain. It was then his duty to receive the grain with the ticket, to grind it at the mill, to receive the money for the grinding from the person bringing the grain with the ticket, and to account to the governor of the gaol for the money so received. The governor accounted for the same to the treasurer of the county rates. It was a breach of the prisoner's duty to receive or grind grain without such a ticket as above mentioned, and he had no right to grind any grain at the mill for his private benefit. The prisoner was appointed to his situation by the magistrates of the county at a fixed weekly salary, which was paid out of the county rates. The monies which the prisoner misappropriated he received from persons for grinding their grain at the mill, but none of these persons had obtained a ticket from the porter's lodge, nor had they been directed by the prisoner to obtain such tickets, nor was there in fact any ticket at all. It was objected that the prisoner did not receive the money by virtue of his employment, nor for or on account of his master; (*l*) and, upon a case re-

(*j*) The invoice was for the pickles only.

(*k*) Reg. *v.* Wilson, 9 C. & P. 27.

(*l*) It was also objected that the County Sessions had no jurisdiction to try the prisoner, as the gaol was within the city; it was answered that the 4 Geo. 4, c. 64, s. 48, placed it in the county; and further that the prisoner was not the servant of the Clerk of the Peace and others, or of the inhabitants of the county; but no opinion was expressed on either of these points.

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F@ DCA @ AC =' J =C<@ >=CE@?@C @J D A @En F@ DC A?@C GFA G= ?' F @CB @ A' =<@' =' b =? A1 DA = A@ =?E' =II=>@ A' @ = # E @ =?E' A?' F C@ C?' = <@E' F J' 1AC F@ JA?@ F@ DC A?@C' = E' F@ GA E' @ @' 1AC F@ DA = A@ =?E' =II=>@ A?' F@ 1A AG ?>' @ E= = ' F@ F=E' ?A C@ @ B@E' F@ J A?@ @' J @?T A?@E' F@ J' F@ F=E' A E' F@ DA = A@ 1AC =?E' A?@' FAJ = F=B ?>' IA >F F@ J I ?A' A F@C ?=J @ @' = E' F@ FA E' F=B@ A' E@E # 1AC AJ@ D= J @? A?' F@ DCA @ ACH = A ? GF F' G= =' ACC@ E@E A?' ! 1AC ? >F =1 @CG=CE F@ DCA @ AC =>= ?' = <@E' F J' A' @ @41AC F@ DA = A@ ;' F@ " E ! #' < A E' ?A EA' A' F@?F GA E' A?' F@ 1A AG ?>' E= @' = E' F@ F=E' ?A @@?' FAJ = AC C@ @ B@E' 1AC F@ >AAE I GA E' EA' A' F@ DCA @ AC A E' F J' F= 1' F@ JA?@ G= ?A D= E' A?' F@ 1A AG ?>' E= F@ GA E' > B@ F J ? A' AE F@ DC A?@C' E E' ?A D= =?E' F@ G= =DDC@F@?E@E @' F E' A E' A L@ A1' F@ DA = A@ A' FAJ = GFA' F=E' ?A D= E' 1AC F@ J ;' I F@ F=E' A E' DA = A@ A' =?A F@C' D@C A?' GFA' D= E' F 4L' -8 1AC' F@ J = F@ J @ C @ A E' F@ Z C 7 F @' @@J A' J @' J F' JAC@' <@' =?' = A ? ?>' 1AC' JA?@ =?E' =' E@1= ?' D= J @? F=?' =' 1= @' = A ? ?>' =?E' @J I@KK @J @? E@D@?E @? C@ A?' F@' A? C A?' A D A?' F@' = @J @CC A1' F@' DC A?@C F= F@' F=E' ?A C@ @ B@E' F@' JA?@ =DD@=C F= = =' 1= a<=E' C@ @ B@E' F@' DCAE @' A1' D=C !A1' F@' B@>@ =I @ I ?A 1AC' F@' A F@C' D=C GF F' C@J = ? ?D= E' ?AG & F@?' F@' A E' F@' DCAT @ AC' F= F@' F=E' ?A C@ @ B@E' F@' JA?@ F= = = @J @? G= C @' 1' F@ J @=? A' = F= F@' F=E' ?A C@ @ B@E' F@' JA?@ 1AC' F@' GFA @ I G= 1= @' 1' F@' J @=? A' = F= F@' F=E' ?A C@ @ B@E' =? D=C A1' F@' > A1' F@' DC A?@C' E@D@?E DA?' F= ;' 1AC' 1' F@' J @=? A' @J I@KK @' =?E' @= D=C A1' F@' JA?@ F@ > ;' 1' ?A F@?' A G = b F J H7E3'

" B @>, = < A?' ,' 6' 9: d' 9: : /) ' '+ A' 2 ' M' HGM' L' .EA. 49' +** "2== 3*/' : /&/(/ '1/' 49 =' 1+=/' +"" /+(=' 42' 9+J/' 3/ /'' /((2' /2<=*#' */&4' 42' 49/' 6<(#' 4' =92<*:' ' /J/(' 3/' *2=4' =)94' 2& '' 49/=/' 1+=/=' 49+4' 49/' ; +'' T</=4 2'' =' 79+4' 9+=' 49/' "(=2' /(' :2' /' 7 49' 49/' 49 ')' +**/) /:' 42' 3/' / ; 3/aa*/:' ^ '' 49 =' 1+=/' 49/' "(=2' /(' 9<:' +14<+**#' 12' J/(4/:' 49/' ; 2' /# 9/' 9+:' (/1/ J/:' 42' 9 =' 27 ;' <=/' 4' =' +' &+**+1# '' =<19' +' 1+=/' 42' 4(/+4' 49/' T</=4 2'' +=' 4<(' ')' 2'' 49/' 4(<49' 2(&+*=/922 :' 2& +' # =4+4/ ; / '4' ; + : / '2(7(44/'' 3# 9 ; ' <19' =4+4/P ; / '4=' +(/' ; /(/*# /J : /'1/' +' :' +(/' 42' 3/ 4+0/'' '42U 12' = : /(+4 2'' 7 49' 49/' (/=4 2& 49/' &+14=' ? +' :' &' 49/' &+14=' =9/ 7' 49+4' 49/' "(=2' /(' 9+=' '' &+14' 2')&<**# 12' P J/(4/:' 49/' 49 ')' 42' 9 =' 27 '' <=/' 7 49' 'P 4/ '4' 42' : /"(J/' 49/' 27 ' /(' 2& 4' 9/' 2<)94' 42' 3/' 12' J 14/ : ' 9/(/' +' #49 ')' =' (/P 1/ J/ :' 3# +' =/(J+' 4' &2(9 =' ; +=4/(' 49/' 12((/14' J /7' 2& 9 =' 12' :<14' =' 42' 4(/+4' 4' 6<=4' '' 49/' =+ ; /' 7+# +=' &' 9/' 9+:' 4+0/'' 49+4' 49 ')' 2<4' 2& 9 =' ; +=4/(=' 92<=/' +' :' 9+:' +&4/(7+(:=' 7(2')&<**# : /+*4' 7 49' 4' +' :' 49/''42' 12'= : /(79/49/(' =<19' : /+* ')' 7 4* 4' 7+=' &/*2' 2<=' /' "+(4 1<*+(*#' /) ' ' +J =2' 'D 2V' ' ' .AE ? 49/(/' +' 3+' 0(<"4 19+') /:' ; 2' /# +3(2+:' +' :' 2*/(:) /' '=+ :' 0 <""2=/

@B E@? @ F= F@ F= E@? @E F@ C@ @ D A1 A F@ <@ DA? 49/ (/1/ "4 2&
=? ?E J @? 1A @ J I@KK @ J @? = DD@=C@E F= * C @ =
= @ J @C F=? I J @=? A1 F@ DC A?@C = F @C<= =CC @E A? 49+4 4 = '24
F@ = @ C=E@ = = GF=C1 = A @ @C$ F@ A C @ A1 I ?@ /'4/(/h ' +112<'4? +
G= 1A F@ DC A?@C A @ F@ = @ =?E A A?B@ F@ J A F@ : / ' +# 2& 49/
AJ @C ? F AG?' IA= = * C @ F=E ?A IA= F@ (/1/ "4 2(+
DC A?@C I@ ?>= A '= A= J @C F=? A?' F AG?' = A ? ; F@ &+*=/ +112<'4
DC A?@C F=E C@ @ B@E F@ J ?' b @ A? F F@ =?E F@ DCAT ; <=4 3/
@ AC F=E F=E ?A =EZ J @? A1 = A ? 1AC GA @=C =?E A? =927 '' =2 ; /
* C @ = ?> 1AC F@ DC A?@CH IAA< F@ A E ?A 1 ?E FC@@ 1+=/=
J @? @C@E ; F@ F=E ?@B@C D@ 1 = = <@E F@ DC A?@C A
= A ? 1AC @ F@C! A1 F@ J =?E < 6 & > 4 * < E"! 4 "
6&4> #' 4 4"' 5 <4> 6 #E4> # A =?E F@C@
?A = 1@ A? A A?B@C A? ; G =<@ F= F@ DC A?@CH D
F@ JA?@ ? A F AG?' DA <@ =?E F= J =E@ ?A @? C ; F=
?A 11 @? =E F@ E@? @E F@ C@ @ D A1 F@ JA?@ F@
= @ J >F F=B@ I@@?' E 11@C@? 1 F@ J @C@ 1= A1 ?A @? @C ?>
= J G= @?A >F A DDAC =?' ?E J @? 1AC @ J I@KK @ J @? @B@C @C<' GFA FCA >F =C@ @ ?@ A J @E =?' @? C GA E
I@ =I @ A I@ A?B @E A1 1@ A? F@ DC A?@C J I@ = T
b @E H1 3
DA = @ A?E ?E @ J u? =>= ? F@ =J @ DC A?@C F@ @B T
E@? @ A1 F@ JAE@ A1 E@= ?>G= F@ =J @ = ?' F@ = @ =?E
=DD@=C@E F= * C AG@E A * C @ 1AC = @ =?E
D= E (X : E ?' = F E I@ ?>= AG@E A = E A ? =?E F@ C@ J = ? ?> : I@ ?> @ =>= ? =' E@C = A ? E @ 1CA J F@ DC A?@C A =?E F@ DC A?@C F=E C@E @E ?' F @E>@C A F@ = J A ? A1 =?E F=E @? @C@E : E ?' F@ = F IAA< * C @ F=E ?@B@C = @E DA?' F@ DC A?@C A = A ? = A F J A1 A =?E =DD@=C A J @ F= F EA@ ?A = J A ? A J @ J I@KK @ J @? ?' = @ A1 F b @ A= 1%>AAE =C@ =<@?' =?' ? @? J = J AC@ @=C =DD@=C F=?' F@ = @ A1 JA?@ = F@ = 1 @ D @ A1 A ?' J =? ?' J =? = @ ?A I@ D= E AB@C F@C@ ?A F ?>' ?' F = @ A I C ?>' F@ DC A?@C B F ?' F@ = @ @' ?@B@C E@? @E F@ C@ @ D A1 F@ JA?@ =?E G= ?@B@C = @E DA?' 1AC %" F ?<' @ @? = F= F@C@ FA E I@ =' E@? = A1 F=B ?>' C@ @ B@E F@ JA?@ AC @ @' F= AJ @' 1= @' = A ? FA E I@ > B@?' F@ DC A?@C J I@ = b @E HN d
?' F@ DC@ @E ?>' = @' G= AIZ@ @E F= F@C@ G= ?A @J +'=' DC A?@C
I@KK @ J @? = F@ DC A?@C F=E = A ? @E 1AC = F@ JA?@ F@ 4_/) '04# 2&
F=E = = C@ @ B@E ; 1 ?A JA?@ = = F=E D= @E =?E F=E
I@@?' @? C@ =' C@E C=? = A?' A?' IA F E@ GA E ?A F=B@ ; 2 /# +1
I@@?' @J I@KK @J @? 1AC F= C J@ J@C@ =' = AC =C @? 4<+**#
=?E A E A? I@ DCAB@E I FAG ?>' F@ = = C@ @ D A1 F@ U3<4 3/ 2 '*#
JA?@ =?E F@ = = @J I@KK @J @? A1 F@ JA?@ @ 1 ; =?E = 234+ '=1(/ : 4
= F= G= C@ @ B@E G= = A ? @E 1AC F@ = @ G= F@ =J @ = < +112<'4
1 F=E I@@?' @? C@ =' C@E C=? = A?' ; =?E F @@J A F=B@
I@@?' =' >AAE AIZ@ A? I F DA ? G= ?A E@ E@E = F@
DC A?@C G= = b @E A?' F@ >CA ?E = IAB@ = @E ?E GF@C@ A?
=' J =C ?E J @? F@ = J @ b @ A?' =CA @ A J =? =1 @C

C@=E ?>' @' ?A @' A' F@' CE' @E A?%' GF F' A? = ?@E' F@' DC@ @E ?>'
D=C=>C=DF%' F@ E' F= ' = ' ?A' J A?@ ' F=E' = = !D= @E%' F@' A11@? @'
A1' @ J I@KK @ J @? ' F=E' ?A ' I@@?' A J J @E%' 1*3
' GF@ H@' I ?' =?' ?E J @? ' 1AC' @ J I@KK @ J @? ' ' =DD@=C@E' F= '
F@' DC A?@C' = ' =' D@C ? @?E@? ' A1' DA @' A >F ' A' F=B@' C@ @ B@E'
@C = ?' 1 ?@ ' 1CA J ' =' DA @' A? =I @%' I ' F=B ?>' A' D= ' F J ' F '
G=>@ %' F@' E E' ?A ' C@ @ B@' F@ @' 1 ?@ %' I ' FD ' G@C@' <@D ' I ' F@'
DA @' A? =I @%' =?E' 1' F@ ' = J A ? @E' A' J AC@' F=?' =' G@@<H'
G=>@ ' ?' =? ' G@@<%' F@' I = =? @' AAE' IB@C' =?E' 1AC J @E' D=C ' A1' F@'
G=>@ ' 1AC' F@' ?@] ' G@@<%' =?E' 1' F@ ' 1AC J @E' @ ' F=?' F@' G@@<H'
G=>@ %' F@' DC A?@C' D= E' F J' A' J F' = ' J =E@' D' F@' = J A ? ' A1' F '
G=>@ ' 1AC' F= ' G@@< ' F@' J ' G@C@' @? @C@E' ?' =' IAA<' = ' F=B ?>'
I@@?' C@ @ B@E' I ' F@' DC A?@C%' =?E' F@' = A ? ' G= ' >?@E' I ' F@'
DC A?@CH' ' G= ' AIZ@ @E' F= ' F@' DC A?@C' F=E' ?@B@C' C@ @ B@E'
F@' JA?@ ' F@' G= ' F=C>@E' G F' @J I@KK ?>0' ' 5= @ A?%' %'
F@ E' F= ' F ' G= ' =' A? C B@' C@ @ D ' A1' F@' JA?@ %' = ' F@'
DC A?@C' F=E' >?@E' F@' IAA<' = ' F=B ?>' C@ @ B@E' F@' 1 ?@ %' NGd
' = @' G= ' E@ E@E' GF F' GA E' @@ J' A' F@G' F= ' =?' ?E T
J @? ' 1AC' Y@ J I@KK @ J @? ' J = I @' DDAC @E' I ' DCAA1' A1' =' >@?@C= '
E@1 @? ' A1' JA?@ %' G FA ' F@G ?>' =? ' D=C =C' J' C@ @ B@E'
=?E' ?A ' = A ? @E' 1AC' F@' ' A ? ' F=C>@E' F@' DC A?@C' G F'
@ J I@KK ?>' 8 ' A?' F@' -9 F' A1' > G F@' -?E%' H ' 4 ' F@

YGA E' I @' DCAB@E' F= ' F@C@' G= ' =' E@1 @? ' ?' F@' DC A?@CH' = A ? ' F= ' F@C@' G= ' ?A' DCAA1' A1' F@' @? I@KK @ J @? ' A1' =? ' D=C =C' J ' E@C A?' ' !' & F= @B@C' E 11@C@? @' A1' AD ? A?' F@C@' J >F ' I@' ?' F@' = @' A1' - ?' B ' Y"4 '783' F= ' DCA @@E@E' J AC@' DA?' F@' D@ =C' 1= ' A1' F= ' = @' F=?' DA?' F@' =G ' ' ?A ' 11 @? ' A' DCAB@' = ' F@' C = ' =' >@?@C= ' E@1 @? ' ?' = A ? ' AJ @' D@ 1 ' J' J ' I@' DCABDE' A' I@' @J I@KK @E' ?' <@' J =??@C' = ' ?' = H @? ' AJ @' D=C =C' =C @' J ' I@' DCAB@E' A' F=B@' I@@?' A @? HN=d' 7

9/(/' ; <=4' 3/' /J : / '1/' 2' =2 ; /' "+(4 1<[' *+(' =< ; ' (/P 1/ J/ : ' +' : 2' 49/' / ; 3/aa*/P ; / '4 2' "+(4 2(' 49/' 792*/' 2' 49+4' "+(4 P 1<*+(' =< ;

DA?' =?' ?E J @? ' 1AC' @ J I @KK @ J @? ' ' G= ' AD@?@E' F= ' F@' DC A?@C' G= ' @C<' =?E' C=B@ @C' A' F@' DCA @ AC' =?E' F= ' F ' E ' G= ' A' C@ @ B@' 1CA J ' F@' AJ @C ' J A? @ ' D= E' I ' F@ J ' 1AC' >AAE ' DD @E' =?E' = A' A' D= ' A ' A1' F' J A? @ ' F@' G=>@ ' =?E' A F@C' A >A ?> ' A1' F@' @ =I F J @? ' ; F@' D= J @? ' A' J =E@' I@ ?>' ? @C@E' ?' =' J = ' IAA<' <@D ' I ' Fu' DC A?@C' =?E' F@ C' G@@< ' A = ' =CC @E' ? A' =' =C>@C' IAA<' GF F' F@G@E' F@' >@?@C= ' E@I AC' =?E' C@E AC' = A ? ' I@ G@@?' F@' DC A?@C' =?E' F ' J = @C' ; =?E' F@' I= =? @' F@G?' ?' F ' = ' = A ? ' G= ' 1CA J ' J @' A' J @' C <' =?E' AJ @ J @ ' D= E' AB@C' =?E' AJ @ J @ ' ICA >F ' 1ACG=CE' = ' F@' AJ J @? @J @? ' A1' =' ?@G' = A ? ' @? @D @J I@C' A?@' A1' F@' G@@< ' A = ' = ' '=DD@=C@E' ?' F@' J = @C' IAA<' ! F@G@E' =?' =>>C@>= @' A1' D= J @? ' A' F@' = J A ? ' A1' ' F@' = A ? ' 1AC' F= ' G@@<' ' G= ' @? @C@E' ?' F@' =C>@C' IAA<' = ' =?E' F ' 1= @' @? C ' =DD@=C@E' A' F=B@' I@@?' G C @?' A?' =?' @C= C@ ' ?' AI@C' =' I= =? @' G= ' C <' A?' F@' >@?@C= ' = A 6 ' ; =?E' F@' J ' 1A ?E' A' I@' E @' DA?' F= ' I= =? @' G= ' =CC @E' 1ACG=CE' = ' F@' 1 C ' @J ' A1' =' ?@G' = A ? ' GF F' G = ' @ @E' ?' # @ @J I@C' =?E' F@' I= =? @' = ' F= ' J @' D= E' AB@C' A' F@' DCA @ AC' ' I@ ?>' ' @ ' F=?' ' A >F ' A' F=B@' I@@?' I ' C@= A?' A1' F@' J ' A1' ' I@ ?>' ? @C @E' = ' I@1AC@' J @? A?@E' ? @=E' A1' -8 ' ; F@C@' G= ' ?A' @B T E@? @' A' FAG' =? ' DC@ @' J ' C@ @ B@E' I ' F@' DC A?@C' A?' = A ? ' A1' F ' J = @C' =?E' F@' GFA @' AC' =? ' D=C ' A1' F= ' B@C ' J ' =DDCADC = @E' I ' F J ' A' F ' AG?' @' ; =?E' & =J ' !' F@ E' F= ' ?' F@' =I @? @' A1' F' @B E@? @' Fu' DCA @ A?' A E' ?A ' I@' = ?@E' " B

'" +== =4+' 4' 4/**/(' 2' 49/' 1<=42 ; ' (/P 1/ J/ : ' +' J/(# *+()' =< ; ' &(2 ; ' : &&/(/ '4 "'/(=2 ' ' 2 '' 49/' =+ ; /' ; 2(') ' +' :' 4220' +7+# cGDM ' +' :' 4' 7+' 9/*:' 49+4' 49 ' 7+' =<&& P 1 / '4 /J : / '1/' 7 492<4' "(2JP ')' &(2 ; ' 792 ;' 49/' ; 2 ' /# 12 ' =4 4<4 ')' 49+4' + ; 2< ' 4 7+' (/1/ J/ :

F@' DC A?@C' G= ' ?E @E' 1AC' @ J I @KK ?>' ' @' G= ' = =? ' @ @C' A' F@' AJ ' =?E' ' G= ' F ' E ' A' C@ @ B@' J A?@ ' 1CA J ' FA @' D@C A? ' GFA' F=E' A' D= ' J ' ? A' F@' C@ @ B@C' >@?@C= H ' A11 @' =?E' @? @C' F' C@ @ D ' ?' =' = F IAA<' @' F=E' = A' A' J =<@' @C = ?' D= J @? ' =?E' F@ @' ' G= ' F ' E ' A' @? @C' A?' F@' A F@C' E@' A1' F@' = J @' IAA<' =?E' I= =? @' F@' = J A ? ' @= F' E= ' ; D= ?>' AB@C' A' J F' A1' F@' CD ' = ' G= ' ?' ?A @ ' A' =' D@C AC' A11 @C' =?E' C@ = ? ?>' F@' = F' GF F' G= ' =CC @E' A' F@' ?@] ' E= H ' = A ? ' ?@' E= ' F@' G= ' ACE@C@E' = I A ' @ @B@?' AH A <' A' J =<@' D' F ' = A ? ' @' A? ? @E' FAG@B@C' A' C@ @ B@' J A?@ ' ? ' GA' AH A <' GF@?' F@' @1 ' F@' A11 @' =?E' E E' ?A ' C@ C?' ' E@ < ' =?E' IAA< ' G@C@' F@?' @] = J ?@E' =?E' ?' F@' IAA< ' G@C@' 1A ?E' @? @C@E' = ' F=B ?>' I@@?' C@ @ B@E' @B@C= ' J ' = J A ? ?>' ?' F@' GFA @' A' - .9 ' . ' E' =?E' A?' F@' A F@C' E@' G@C@' D=

WXd /V' □ ' ! (2J/ ' ' ' ' ' ' ' +**=' G .' " ' HIM
I ID' ? .' " ' HIM " B /) ' . 9+" ; + ' ' . ' ' ' ' . . N'
" B /) ' ' *2#:' 2' /=' E' ' ' ' 9 ' : /1 = 2 '' 7+' ; + : /' 2 '' 49/' ; /(/'
GEE' &' +' :' =/ /' /) ' &' 2*=4/ ' 92* ; ' . .' 2" / ' ')' =4+4/ ; / '4' 2& 12<' =/*
2V' ' ' H.H' (/44' ' ? +' :' /) ' &

C=@? = J A ? ?>' A' 9 # ' FZ I= =? @' 1A ?E YGF F'
A >F A' F=B@' I@@?' - 8- : I# YG=' -. @ F=?' F=
J F@' !GFA @' A1' F@' J A?@ G=' C@ @ B@E' I@ G@@?' @?' =?E' GA'
AH A <' A1' F=' E= G=' A? @?E@E' F=' F@' @B E@? @' 1= @E'
A' DCAB@' F@' =DDCADC = A?' A1' =? D=C =C' J' C@ @ B@E' 1CA J'
=? A?@' D@C A? GF F' G=' ?@ @ =C A' DDAC' F@' F=C>@
C @ 7 F ?<' F@'A11@? @' 11 @? J=E@' A G F ?' F@'
J @=? ?>' A1' F@' = @ 1' F@' Z C =C@' = 1 @E' F=' F@'DC A?@C'
C@ @ B@E' ?' F@' =>>C@>= @' F@' =J A ? G F' GF F' F@' =DD@=C A'
F=B@' F=C>@E' F J @ 1 =?E' F=' F@' =I A?E@E' AC' C@1 @E GF@?'
= @E' DA? A' = A ? @=B ?>' =' DAC A?' A1' F@' >CA J' E@T
1 @? F@C@' GA! E' I@' A? =? 1= C@' A1' Z @' 1' G@C@' A'
E@ E@' A F@CG @ ? @' J DA I @ ?' = @ <@' F@' DC@ @?
GF@C@' =' ? J I@C' A1' E 11@C@? =J A ? A1' J A?@ F=B@' I@@?' C@T
@ B@E A' D@ 1 GF F' J' AC' J AC' F@' D=C A1' GF F' J'
AC' J F=B@' I@@?' @ J I@KK @E Nd
! A ? = @>@E' F=' F@' DC A?@C' I@ ?>' @ J D A @E' ?' F@' D I " /V+ ; ')'
@CB @' A1' F@' W @@? E E' I B C @' A1' F @ J D A J @?' C@ @ B@' +2(2<'4=
@C = ?' J A?@ A' G ' A?' = A ?' A1' F@' D I @CB @ [1' C@B@? !'=
=?E' 1@ A? A =DD @E' A' F AG?' @' F@' DC A?@C' F=E' 1AC' 3+*+'1/
@B@C=' @=C I@@?' =?' A11 @C' A1' C@ @ D A1' ? =?E' C@B@? @' 1AC' F@'
F@ @C' E C ?' F=' =D= F@' C@ @ B@E' ? A J @' =] =?E'
=?E' = @ @E' =]@ =?E' E @ A1' @] @' ?' @= F' A1' F@ @' 3+*+'1/ 2&
= A ? F@' G=' = AG@E' I F@' A=CE' A1' ? =?E' (@B@? @' A' C@T BHMM &2(/VP
= ?' ?' F F=?E =' I= =? @' A1' V' A' J @@ A? ?>@?' @] D@? @ 1 =/ :<4 /=
F@C@' G@C@' GA' ? D@ AC A1' =] @ 1AC' E 11@C@? DAC A? A1' F@' +*2 '/ &(2 ;
DC A?@CH' E C =?E' G=' F E A' @?E' F@ J' C@ C? 49/ "(/1/: ')'
F@G ?>' F@' = J A ? Z@ @ B@E' =?E' C@ J @E' I F J =?E' F@' BGE }'+':'
I= =? @' C@ J = ? ?>' ?' F F=?E =+ :'49+4 7+=
C@?E@C@E' ?' =?E' > 988 F@' I= =? @' C@ J = ? ?>' ?'
F F=?E' ?E@C' @= F' F@=E' J F' @] @@E@E' GF=' F@' G=' = AG@E' +':' [
A' C@ = ?' ; =?E' ?' @D @ J I@C' F@' I= =? @' ?' F@' GFA @' = J A ? @E' 49+4 9/ 9+:'
A' J AC@' F=?' 8 V' ?' F=' J A? F' F@' >@?@C=' CB@ AC' A1'
? =?E' (@B@? @ =1 @C' @]=J ? ?>' F@' DC A?@CH' = A ? DCAE @E' ? @! D@
A' F J' =' = @ J @? @] C= @E' 1CA J' F AG?' = A ? J =< ?>' F@' *+4 2 " ? 9/*:'
I= =? @' ?' F F=?E 8- :V' =?E' =' 1C= A?' @' = E' F@' <?@G' F@'
I= =? @' G=' = I A F=' J F@' F=E' >A?@' FCA >F' F@' = A ? ' >J
=' 1@G' E= I@1AC@' F@ CB@ AC' F@?' = <@E' 1' F@' G=' DC@D=C@E' 3/aa ')' 49/'
A' F=?E' AB@C' F=' I= =? @ AC' =? D=C A1' ; F@' = E' F@' G=' ?A
F@' CB@ AC' F@?' C@ J ?E@E' F J' F=' F@C@' G=' =' I= =? @' A1'
@] @' E @ = A?@' A1' = I A V' =?E ?>' =>= ? F J' 1CA J' F@'
DC@B A * A?E= GF F' G=' =' C@ @ D' !E=' = ' =C1AC @ F@'
DC A?@C' F@?' AA<' A -88V' ?' =?<' A1' ?> =?E' ?A @ =' F@b @' 1AC'
-8V' : V =?E' =' J A?@ ' ACE@C' 1AC' : =?E' = E' F=' G=' = ' F@

W1 /) ' . + ; 3/(4' G 2V' HMN' 9/ 49/' 792*/' 2& 49+4 =< ;' +4 49+4 4 ; / =' +'
"(=2 ' /(; <=4 9+J/' 3/ / '' ' : 14/ :' <' : /(=/(J+' 4 ; +# =4/+* +4 2 ' /' 4 ; /' +' # ' < ; P
49/' G '): ' ' .' 3<4 49/' 4/(; = '' 3/(2& =< ; = (/1/ J/ :' &(2 ;' : &&/(/ ' 4
49+4 1 : :' '2 =2 &+(: &&/(&(2 ;' 49/' D "'/(=2 '= +' :' "<4 '' +' 4 ** 42) /49/(' =2
'E ! /2') :' GN' =' ID' += 42 ; +0/' +' # +' =/(J+' 4 ; +# (/1/ J/' +' # ' < ; 3/(2&
: &&/(/ '1/' += 42 49/' "2 ' 4 9/(/' :/1 :/ :' =< ; = &(2 ;' : &&/(/ ' 4 "/(=2 '=' +' :' / ; P
9/' "*+ '' +' =7/(42 49/' 236/14 2 '' ''49 = 3/aa*/' 49/ ; ' +** +4 49/' =+ ; /' 4 ; /? &2(
1+=/' = 49+4 49/' "(=2 ' /(7+= =927 '' 42 4 ** 49/' ; 2 ; / ' 4 2& 12 ' J/(4 ')' 49/ ; ' 9/
9+J/'(/1/ J/ :' +** 49/' ; 2 ' /# 49+4 ; 2(' ')' ; +# 9+J/' 9/* :' 49/ ; ' +** 7 49 +'' 92 ' /=4
+' :' 49+4 9/' ; <=4 9+J/' +14<+** # 4+0/'' '4/ ' 4 2 ' ' ! ' /' ' & +** ='
+7+# 49/' GDMD' 7 9/'' 9/' */& 49/' 2&& 1/ S:"' HIM
+' :' 49+4 49+4 7 = 49/' / ; 3/aa*/ ; / ' 4 2&

8 ' / W ' 5 ' ' & .'

JA?@ ' F@' F=E' ?' F@' GAC E ' F@' CB@ AC' = <@E' F J ' GF= ' F@' F=E' EA?@' G F' = ' F@' C@ ' @' = E' F@' F=E' D@? ' ' ?' =?' ?1ACT ?= @' D@ = A? ' 'G= ' AIZ@ @E' F= ' = ' ?A' @B E@? @' G= ' > B@?' A1' F@' C@ @ D ' =?E' J =DD = A?' A1' =? ' D=C =C' J %' I ' A? ' =' >@?@C= ' E@1 @? ' ?' = A ? ' DCAB@E%' F@' DC A?@C' A E' ?A ' I@' A?B @E';' I %' DA?' =' = @' C@ @CB@E%' =1 @C' =' B@CE ' A1' > %' F@' A?B A?' G= ' F@ E' C >F ;' 1AC' GF= @B@C' E ' F@C@' J >F ' I@' = ' A' F@' =C>@C%' J%' F@C@' G= ' ?A?@' = ' A' F@' 1%' =?E' F@' @B T E@? @' G F' C@ D@ ' A' F= ' J' @=C Z'' I HA >F ' F@' = @' G F ?' F@' = @ ' ' G= ' DCAB@E%' A ' A1' F@' DC A?@CH ' AG?' J A F%' F= ' F@' F=E' C@ @ B@E%' ?A' J = @C' 1CA J ' FAG' J =? ' E 11@C@?' D@C A? %' B=C A ' J ' = J A ? ?>' A' %' GF F' 1AC J @E' =' 1 ?E' ?' F ' F=?E ' I@ A?>T ?>' A' F@' CAG?' 1AC' GF F' @' G= ' IA ?E' A' = A ? ;' =?E' F@' b @ T A?' G= ' GF@ FDC' F@' F=E' 1C= E @? ' =DD @E' = ' AC' =? ' D=C ' A1' ' @' F J @ 1' DCAE @E' =' J' A1' J A?@ %' =?E' E E%' 7 ' F=B@' D@?' F@' C@ ' ?' =?' ?1AC ?= @' D@ = A? H ' ' ?A ' J = @C = ' GF@ F@C' F@' J ' DCAE @E' G= ' D=C ' A1' F@' 1 ' AC' ? A ;' I@ = @ '' F@' C@ %H GF F' J ' ? E@' D=C ' AC' = ' A1' F@' 1%' F@' F=E%' = ACE ?>' A' F ' AG?' = @ J @? %' @]D@?E@E' ?' =?' ?1AC ?= @' D@ = A?%' 1#3' ' A' F@' ' F@C@1AC@%' ' =DD@=C@E' F= ' F@' DC A?@C' F=E' C@ @ B@E' F= ' ' A?' I@F= 1' A1' F@' CAG?%' =?E' F=E' 1C= E @? ' =DD @E' D=C ' A1' ' A' F ' AG?' @' F@C@' F@C@1AC@' G= ' =' D@ 1 ' C=? = A?' DA ? @E' A %' = ' A' GF F' F@' A?B A?' G= ' @=C ' = ?@E%' =?E' ' I@ = J @' ??@ @ =C ' A' E@ E@ GF@ F@C' =' >@?@C= ' E@1 @? ' GA E' 11 @%' N@d 7 !

/(J+'4$= +3=12' : ') /J : /' 1/' 2& / ; 3/aa / '2/ '4

DA?' =?' ?E J @?' 1AC' @ J I@KK @ ?@? ' =DD@=C@E' F= ' F@' DC A?@C%' G= ' @?' I ' F@C' J = @CH ' E= >F @C' A' C@ @ B@' C@?' E @' A' F J' 1CA J' =' @?=? %' =?E' F= ' F=B ?>' C@ @ B@E' F@' C@?' F@' G@?' A11' A' C@ =?E%' =?E' ?@B@C' C@ C?@E' A' F@C' J = @CH ' @CB @' A @T C E>@%' %' = E%' ?' J J ?>' D%' 7 ' F ?<' F= ' F@' C J =? @' A1' F@' DC A?@C' F=B ?>' b @E' F@C' D = @' =?E' >A?@' A11' A' C@ =?E' ' @B E@? @' 1CA J ' GF F' A ' J = ' ?1@C' F= ' F@' ? @?E@E' A' =DDCADC = @' F@' JA?@ ' ;' =?E' 1' A ' F ?<' F= ' F@' E E' A' ? @?E%' F@' '> ' A1' @ J I@KK @ J @? %' N Md

3= 62' : ')' 79/(/' 49/(/' =' '2 & V/ :' 4 ; /' &2(' +112<' 4 ')

& F@C@' F@' DC A?@C%' F=B ?>' C@ @ B@E' GA' J ' 1AC' F ' J = @C%' =I A?E@E' G FA '= @A ? ?>' 1AC' F@ J %' =?E' F@C@' @@ J ' A' F=B@' I@@?' ?A' 1]@E' J @' 1AC' = A ? ?>%' =?E' 1' G= ' C>@E' F= ' ' G= ' J @C@ ' =' ?@> @ ' A' = A ? ;' * AAC@%' %' = E%' 7 @C = ? ' C@ @ B ?>' J A?@ ' =?E' ?A ' 1AC FG F' = A ? ?>' 1AC' ' EA@ ' ?A ' = J A ? ' A' @ J I@KK @ J @? ') A ' =C@' A' >@ ' 1CA J ' = ' F@' 1= ' A1' F@' = @' GF@ F@C' AC' ?A ' F@C@' F= ' I@@?' =?' =DDCADC = A?' A1' F@' JA?@ ') A ' J = ' A J @' A' F@' A? A?' 1CA J ' F@' =D @' A1' J @' F= '

R B' =' 49/' "(=2' /(' "(2 :<1/ :' 2' *# GE.^' ' :' 49/(/' 7+=' 49/' : &&/(/ '1/' 3/P 47 / / '' 49+4' =< ;' +' :' EMM^ ' ' .E^' .D=' 1 :' +4' +** /J/ ' 4=' <' +112<' 4/ :' &2(W1D 1) ' 2+9' s/+(=' ' 'YGY' (/==7/** ' =+ :' 0.' 3# ' 2' ; /+' =' =+# 49+4' 49/' ' : 14 ; / ' 4' =' ' 24' =<=4+ ' +3*/' +' 42' 49/' A MMM^ ' $ 0' =' +4' "(/=/ ' 4+ ; J =/ : ' =92<*:' =+# 49+4' 49/' "(=2' /(' 3/ ') ' =927 '' 3# 9 =' 27 '' +112<' 4=' 42' 9+J/' +' 3+*+ ' 1/' '' 9+ ' : 2& A MMM^ ' :<' 42' 49/' (27 '' +' :' 9/' ; +0 ')' '2' +44/ ; "4 42' /V"*+ '' 4' 2 '' 49/')(2<' :' 2& /((2(2(*2=' 2& 4('/' ; 2' /#' ; /((/*# =+#=' 49+4' 9/' 9+=' /V"/ ' : /:' 4&2('9 =' 27 '' "<("2=/=' 9/' ; +# <"2 '' 49+4' /J : / ' 1/ ' 9/' 12' J 14/ :' 2& / ; P 3/aa* ')' 49/' ; 2' /#' +' :' 49+4' 9+J ')' 3/ / '' 2' 1/' ' : 14/ :' &2(' / ; 3/aa* ')' 49/' 4J92*/' + ; 2<' 4' +' :' / 49/(' 12' J 14/ :' 2(K+1T< 44/ :' 9/' ' /J/(' 12<*:' 3/' ' : 14/ :' +)+ '' &2(' / ; 3/aa* ')' +' #' "+(4' 2& 4 $ 2**210' ' =// ; =' 42' 9+J/' 12' = : /(' 49/' *+7' +=' 42' / ; 3/aa*/ ; / ' 4' 1 & "- 1 <6=/' 42' 49/' 1+=/? 3/1+<=/' 49/' 4/(; =' 2& 49/' G ; ' I' 1' I' 7/(/' *+()/('49 '' 492=/' 2& 49~' D' 'E ! /2' I' 1' GN' <4' 49/' &+14=' =// :' 1*/+(*# 42' 9+J/' 3(2<)* 67 4* /' 1+=/' 7 49 '' 49/' *+44/(' 14' 6 3' &' + ; 3/(4' .' 7+=' (/12)' =/ :' +=' '' "2 '4 W w b' /V K6 ** + ; =' D' ' 6 ' M E

YG=' ?A ' =' J @C@' ?@> @ ?>' A' = A ? % I ' A ' F=B@' 1 C F@C' F@' 1= ' F= % =1 @C' >@ ?>' F@' JA?@ % F@' =I A?E@E% =?E' E E' ?A ' AJ@' I= <' ' F@' G=' ?' AE ') A ' J = ' ?1@C' F= ' F@' ?T @?E@E' A' =DDCADC = @' F ' JA?@ % =?E' 1' A% F@' ' > ' A1' @ J T I@KK @ J @? '123

?E' GF@C@' F@' DC A?@C% =' 1=C J ' =IA C@C% != ' @? ' I ' F ' J = @C' A' E@ B@C' GA' = < ' A1' DA = A@ % =?E' A' C@ @ B@' F@' DC @' A1' F@ J % =?E' F=B ?>' E@ B@C@E' F@' DA = A@ ' =?E' C@ @ B@E' F@' JA?@ % F@' ?@B@C' C@ C?@E' A' F ' J = @C' AC' = A ? @E' 1AC' F@' JA?@ % =?E']' J A? F ' =1 @CG=CE % F=B ?>' ?' F@' J @=?' J @' <@D ' A ' A1' F@' G= % F@' G= ' =DDC@F@?E@E' A?' F ' F=C>@% =?E' F@' F@?' = E' F= ' F@' F=E' C@ @ B@E' F@' JA?@ '4=?E' D@? ' ; C @% % EA I @E' GF@ F@C' F ' G= ; 1 @? ' @B E@? @' A1' @ J I@KK @ J @? % = ' E E' ?A ' =DD@=C' F= ' F@' DC A?@C' F=E' @B@C' E@? @E' F@' C@ @ D ' A1' F@' JA?@ % AC' J=E@' =? ' 1= @' = @ J @? 'C@ D@ ?>' ' - ?' B' ! !6& '1<3' =?E' - ? ' c 4"0 & 6 ' N d' ?' GF F' A @C E>@% % F=E' = @E' A?' F ' DC@B A ' E@ A?% G@C@' F@?' @E ' C @% % FAG@B@C% ' FA >F ' F@' A11@? @' = ' DCAB@E' E E' ?A ' @=C ' =J A ? ' A' =' 1@ A? ' ; I ' A?' F@' = FAC ' A1' F@ @' = @ ' F@' @1 ' F@' = @' A' F@' Z C % "*B

F@' DC A?@C' F=E' 1AC J @C ' I@@?' ?' F@' DCA @ ACH' @ J D A ' = ' 1=C J ' I = 11; F@' DCA @ AC' E@ @C J ?@E' A' >A' A' J @C =% =?E' DCA J @E' F= ' 1' F@' DC A?@C' GA E' >A' AA% F@' GA E' D= ' F ' D= =>@' J A?@ % =?E' @ ' F J ' D' ?' I ?@ ' A?' F ' =CC B= ; F@' 1=C J ' G= ' > B@?' D% =?E' ?' F@' J @=?' J @' F@' DC A?@C' G!= ' @ J T D A @E' I ' F@' DCA @ AC' A' A @ ' F ' A =?E ?>' E@I % I ' ' E E' ?A ' =DD@=C' F= ' ZF@' DC A?@C' G= ' A' I@' D= E!' =? F ?>' 1AC' A' EA ?>' ?' F@' A C @' A1' F ' @ J D A J @? ' F@' DC A?@C' C@ @ B@E' @C = ?' J ' GF F' F@' =DDCADC = @E ' ' G= ' F@ E' F= ' F@' G= ' ?A ' =' @CB=? ' GF@?' F@' C@ @ B@E' F@' JA?@ ' $ F ' @CB @' @?E@E' GF@?' F@' 1=C J ' G= ' > B@?' D% =?E' ?A' ?@G' @CB @' G= ' C@= @E ' 1D 3

' ?% =' = @' DA?' F@' -' & J ' :' ' :% GF@C@' ' G= ' AIZ@ @E' F= ' F@' ?E J @? ' E E' ?A ' = @>@' F= ' F@' DC A?@C' @ J I@KK @E' GF ' F@' G= ' F@% @C<' ; A @C E>@% % = E% ! ' ' I ' ?A' J @=? ' @=C' F= ' =?' @ J I@KK @ J @? ' ' 1' F' =' =H @' I@' DA I @d' =1 @C' =' D@C A?' @= @E' A' I@' @C<' AC' @CB=? % A1' J A?@ ' C@ @ B@E' GF ' F@' G= ' F% GA E' ?A ' I@' G F ?' F@' H1 3

F@' DC A?@C' @E' A% = @?E' J =C<@ ' =?E' D C F= @' I=C @ ' 1AC' F ' @ J D A @C % =?E' F@' C@ @ B@E' A?' @= F' J =C<@ ' E= ' = ' J F' J A?@ ' = % G F' F@' J A?@ @ ' F@' F=E' A' C@ @ B@' A?' = A ? ' A1' F ' @ J D A @C % G= ' @ J = @E' A' I@' 1 @?' A' D= ' 1AC' DC@B A ' D CT F= @ ' F@' A J' G= ' A' E@ B@C' F@' AC?' I@1AC@% =?E' A' D= ' 1AC' ' = ' F@' J =C<@ ' F@C@' G= ' =' IAA<' ?' GF F' F@' DC A?@C' @? @C@E' F ' C@ @ D ' =?E' D= J @? % =?E' GF F' G= ' I= =? @E' G@@< ' F@' DC A?@C' D C F= @E' 89' AA J I ' ' I F@ ' A1' I=C @ % =?E' F=E' @? @C@E' F@' DC @' ?' F@' G@@< ' = A ? ' IAA<' = ' .:_ ' - ' E % GF F' GA E' I@' = ' F@' C= @' A1' -- ' D@C' AA J I%;

WHb' /) ' 3' #'19' Y' 2V' ' ' IIA
"JB
"B' /'4 2 ' / :' +4' 49/' +(
M b' /) ' <10/(' C 2V' ' ' GHA'
9/(/' 7+=' +'' +1T< 44+*' 9/' 2&&/ '1/' 2& / ; 3/aa*/ ; / '4 ; +#' 3/' 12 ; ; 44/ :' '' (/P ="/14' 2&' +' 19+44/*' +=' 7 /**' +=' ; 2 ' /#' ? '27 ' &' =' ; +'' (/1/ J/ :' +' 92(=/' &2(' 9 =' ; +=4/(' +' :' : ="2=/ :' 2&' 4 ' +' :' 0/ "4' 2<4' 2&' 7+#' 4' =' 1*/+(' 49+4' 9/' 72<*:' 12 ; ; 4

49/ 2&&/ '1/?' +' :' 79# '24' &' 9/' (/1/ J/' ; 2 ' /#' +' :' : ="2=/' 2&' 4 ' +=' '' 49 =' 1+=/' ^ 9/' 2&&/ '1/' =' 49/' &(+' :<*/ '4' ; =+"" (2P "(+4 2 '' 2&' 49/' ; 2 ' /#' +' :' 79/(/' 49/' "(=2 ' / (' =' "(2J/ :' 42' 9+J/' : =67=/ :' 2&' 4 ' 49/' 2 '*#' T</=4 2 '' = 6]X' '9/' : :' 4 ":B' /) ' □ ' 2+(/' ' ' ' L' ()G "B' 6 3' □ − D & ' ' W' ' 6 ' A(/' 49 =' :' :' /9' VV ' H

9/' ; 2 ' /# ; <=4' 3/' (/P 1/ J/ :' 79 *=4 49/' =/(J1/ 12 '4 '</=

; 3/aa*/ ; / '4 +&4/(' 49/' =/(P J 1/' =' / ' : /:

9/(/' 49/' /J : / '1/' */+J/=' 4' '' :2<34' 79/49/(' 49/' 2&&/ '1/' =' *+(1/ '# 2(/ ; 3/aa*/ ; / '4

9 - ' 8 ' / W ' ' ' ' & . ' 1 2 3 ' B

GF ' ?' 1= ' F@' DC @' D= E' I ' F J ' G= ' - ' _' D@C' AAJ I '
@' F=E' C '@? @C@E' 9 ' = ' C@ @ B@E' 1CA J ' F ' @J D A @C % =?E'
F=E' I= =? @E' F@' = A ? % F@G ?>' =' J = ' I= =? @' E @' A' F@J '
& >F J =?% % F@ E' F= ' F@C@' G= ' ?A' = @' A1' =C @? ;' = ' 1' G= '
J DA I @' A' E ?> F' F@' J A? @ ' GF F' F@' DC A?@C' C@ @ B@E'
A1' F ' @J D A @C ' 1CA J ' FA @! F= ' F@' C@ @ B@E' 1AC' F@ J ' ;' I ' = '
F@C@' G= ' =' = @' 1AC' F@' Z C ' = ' A' @J I@KK b' @? ' N J d

M ! !4 '4 ' - E 6 #'0 6 > '6 ' 4' #! & 'F"!6 '

/*:' <"2 '' 49/' ?' =' = @' DA?' F@' ' @A ' % =?' ?E J @? ' G= ' FA E@?' A' I@'
HN' ! /2' H' E@1@ B@% I@ = @' ' E E' ?A ' @] DC@ ' =B@C' F= ' F@' J A?@ ' = @>@E'
1' EA-' 49+4' 49/' A' F=B@' I@@?' A @?' G= ' F@' J A?@ ' A1' =? ' D=C =C' D@C A?' '
' : 14 ; / '4 G= ' A? @?E@E% A?' =' = @' C@ @CB@E% F= ' = ' F@' = @' F=E' ?A '
2<)9 4 42' 12 ' [J =E@' @ J I@KK @ J @? ' 4' 4 & ! ' =' I =? B@' 1@ A? % I ' F=E'
4+ '' +** 49/' A? ' @?= @E% F= ' F@' DCAD@C ' C@ @ B@E' ? A' F@' DA @ A?' A1' F@'
(/T< = 4/-' 2& @CB=? % =?E' 1@ A? A ' A?B@C @E' I ' F J % FA E' I @' A? E@C@E'
+'' ' : 14 ; / '4 = ' F=B ?>' I @@?' I ' F' A?B@C A?' 1@ A? A ' =<@?' 1CA J ' F@'
&2(' +(1/ '# +4 DA @ A?' A1' F@' J = @C% F@' A11@? @ ' A? ? @E' =' A J J A?' =G'
12 ' ; 2 '' *+ =C @? ;' =?E' F= ' A? @b @? ' =?' ?E J @? ' 1C= J @E' DAb' F@'
= @' J ' A? = ?' = ' F@' C@b @ ' A1' =?' ?E J @? ' 1AC' =C @? '
= ' A J J A?' =G ' AC' F@' CAG?' ' G= ' =C> @E% F= ' F@' = @'
J =E@' F@' @ J I@KK ?>' I ' @CB=? ' =' I =D B@' 1@ A? % GF F'
I@1AC@' G= ' A? ' =' J E@ J @=?AC% AC' I C@= F' A1' C % 1AC' G!F F' F@'
J = @C' F=E' =' B ' C@ J @E ' F= ' ' G= ' F@C@1AC@' 11 @? ' A'
1A AG' F@' GACE ' A1' F@' % = ' ?' A F@C' ? =? @ ' GF@C@' ?@G'
A11@? @ ' G@C@' C@= @E;' GF F' E 11@C@E' 1CA J ' ?E J @? ' A?' = @ '
J @C@ ' A ?>' F@' A11@?E@C' 1CA J ' @C> ' ?' = @ ' GF F' G@C@'
I@1AC@' =C @? @ ' = ' A J J A?' =G ' F@' Z E>@ ' = ' , ' EA I @E'
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F@' J A?@ ' = @>@E' A' F=B@' I@@?' A @?' G=x' F@' J A?@ ' A1' F@'
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J =E@' F@' DA @ A?' A1' F@' @CB=? % ?E@C' F' C J =? @ % F@'
DA @ A?' A1' F@' J = @C% 1 3

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@B@?' D@? @' ?' J A? @ '? J I@C@E% =?E' A?@' ' ?A @' ;' F@' @B E@? @'
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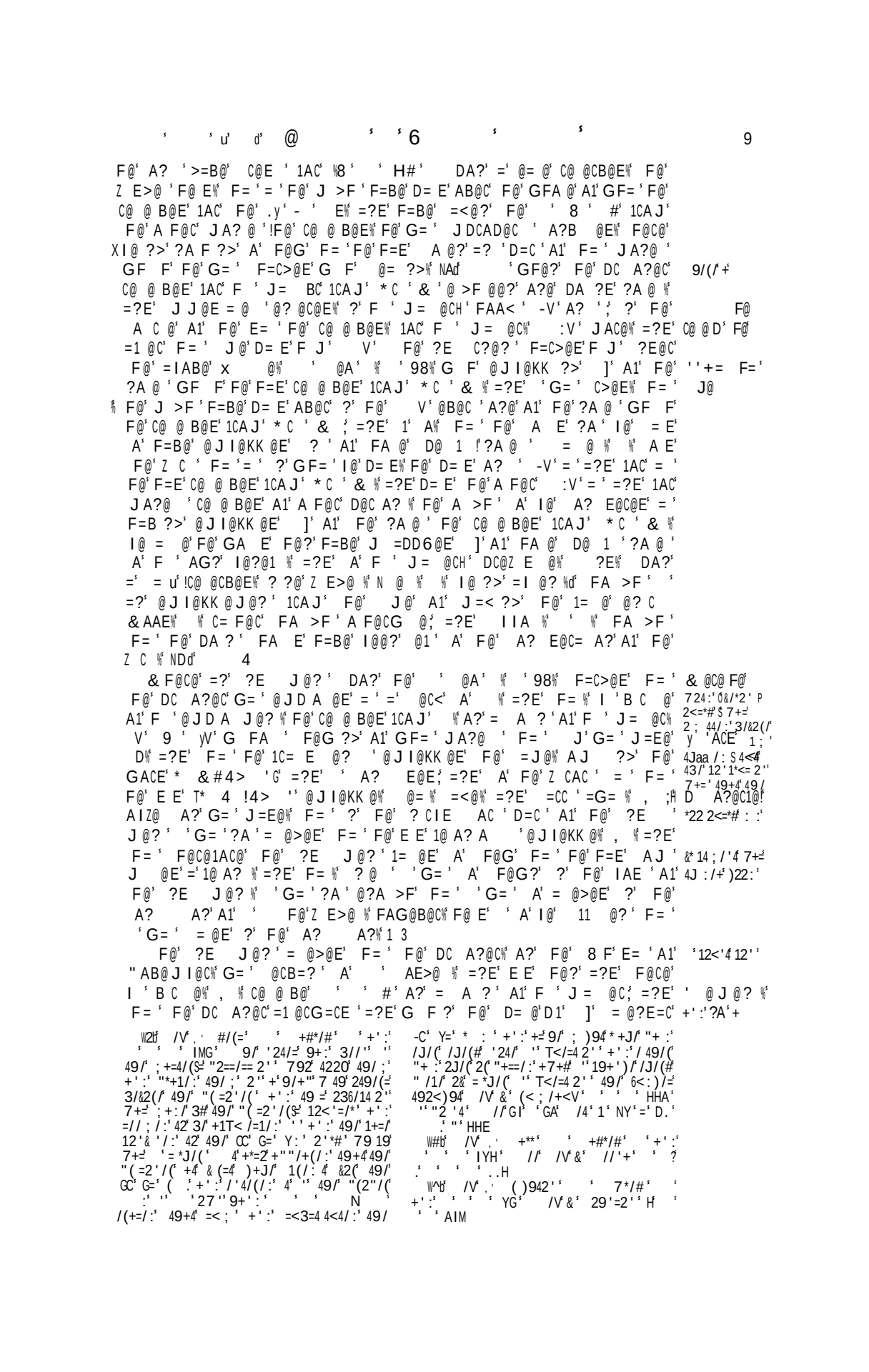

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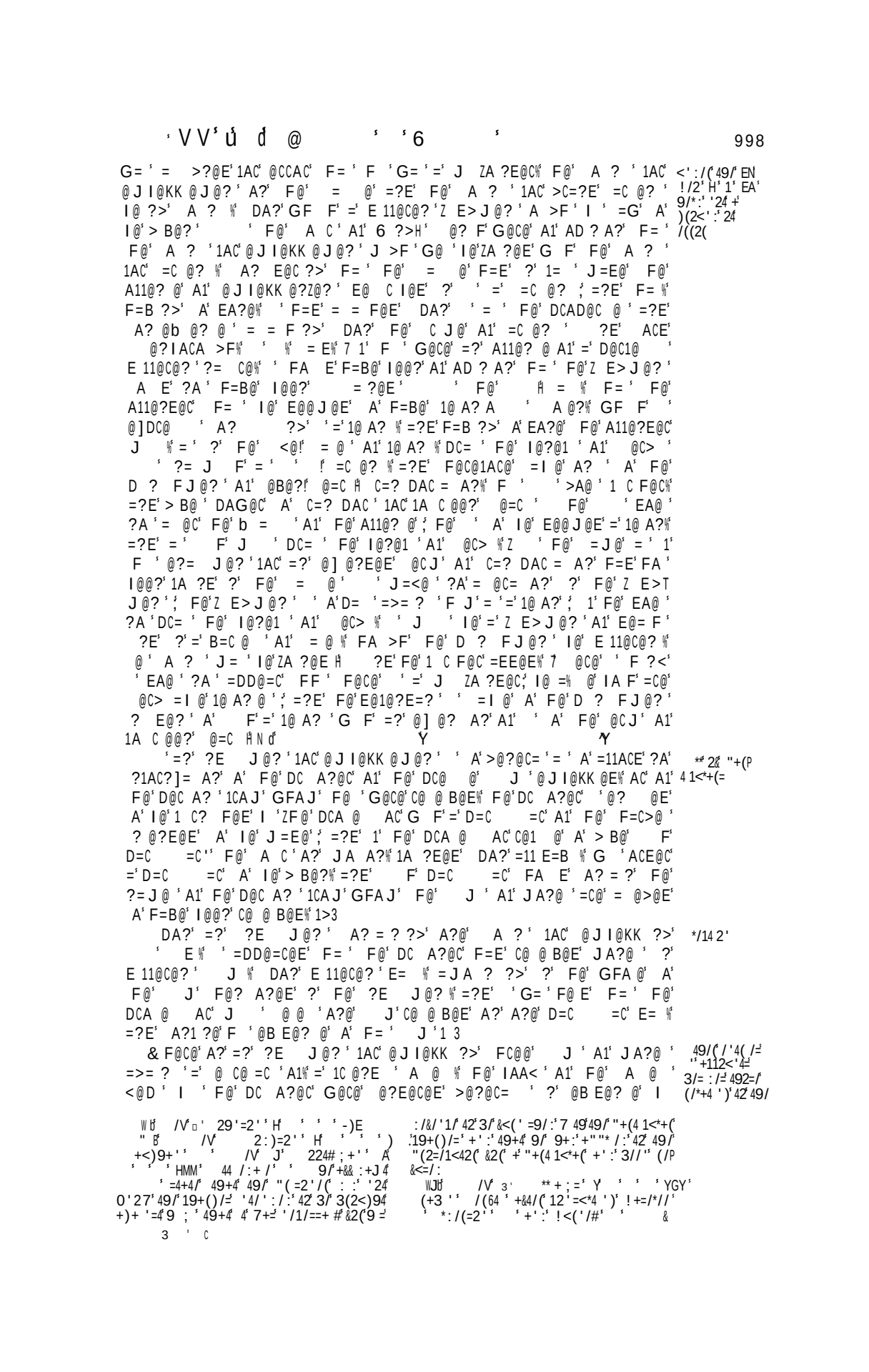

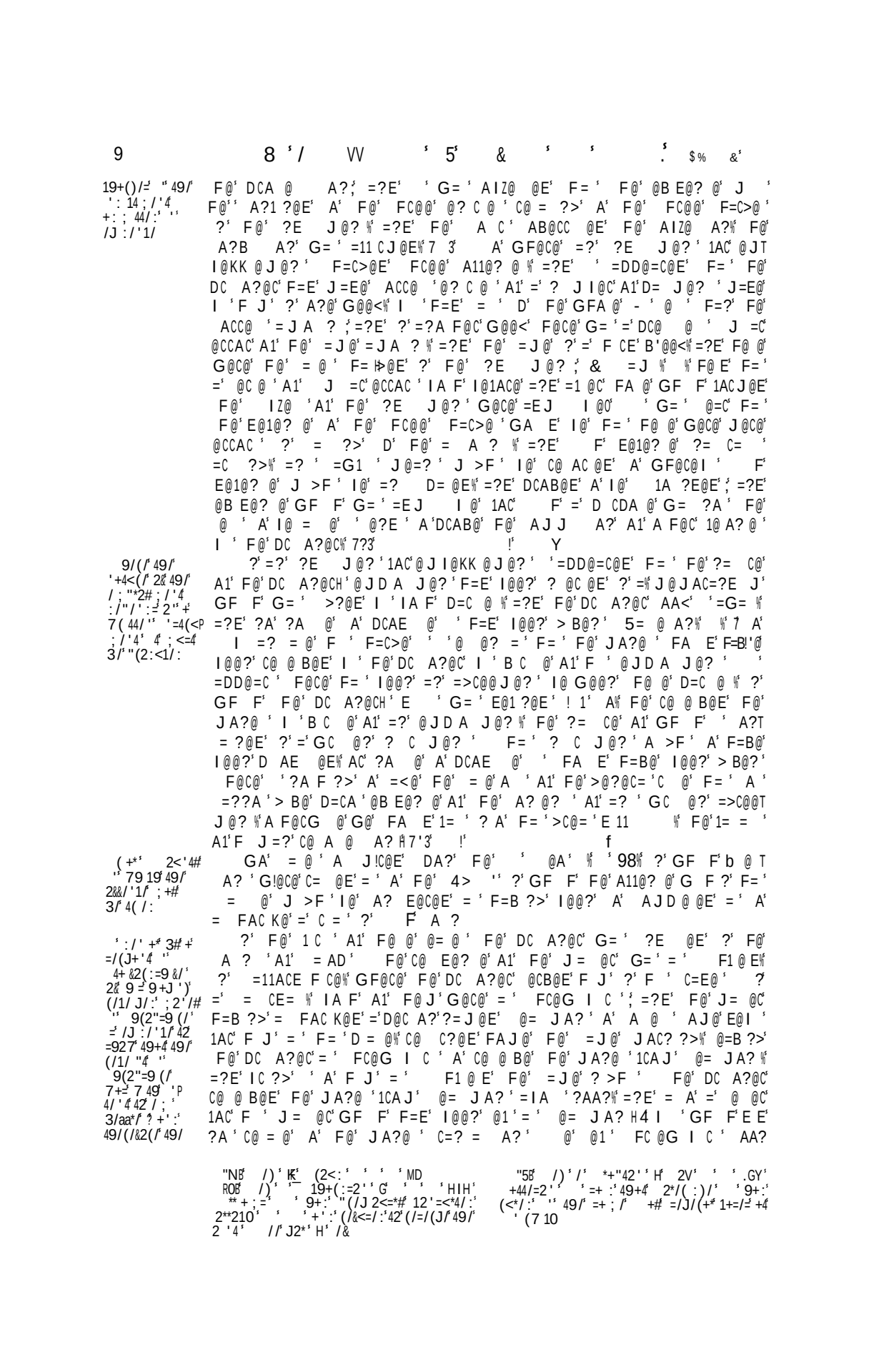

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?' F@' A F@C' = @%' F@' ! ?E J @?' F=C>@E' F@' DC A?@C' G F' @ J I@KK ?>' F@' J ' A1' @?' F ?> %' F@' DCAD@C ' A1' F ' J = @C%' ' =C<@C ' F@' DCA @ AC% GFA' G= ' =' 1 F J A?>@C' J # C C =?@%' ?' F@' A ? ' A1' * EE @ @]%' @?' F ' @CB=? %' F@' DC A?@C%' G F' A J @' F@CC ?> ' A' =' C@@ ' ?' = <1C =C CA=E%' ?' F@' A ? ' A1' CC@ %' A' =' * C ' @B@? ;' @ ?>' F J' F= ' FF' G= ' A' C@ @ B@' F@' J ' A1' @?' F ?> ' 1AC' F@ J ' @' G@?' G F' F@' F@CC ?> ' = I A ']' AH A <' ?' F@' @B@? ?>%' =?E' E@ B@C@E' F@ J' A' * C ' @B@? %' GFA' D= E' F J' F@' @?' F ?> ;' =1 @C' GF F' F@' C@ C?@E' A' F ' J = @C%' GFA' = <@E' F J' 1' F@' F=E' I CA >F ' F@' J A?@ ;' A' GF F' F@' C@D @E%' F= ' F@' F=E' ?A %' 1AC' F= ' * C ' @B@? ' F=E' ?A ' D= E' F ?=' ' J = @C' F@?' D= E' F J' F ' G@@< ' G >@ ' N ' I@ ?>' A?' =' = CT E= d%' =?E' F@' G@? ' =G= %' I@ ?>' A' C@ C?' A?' * A?E= ' J AC? ?>' = ' = ;' I ' F@' E E' ?A ' C@ C?%' ?AC' E E' F@' @B@C' = A ?' 1AC' F@' J A?@ ' ' G= ' A? @?E@E' F= ' F@' DC A?@C' G= ' A? ' =I @' A' I@' ?E @E' ?' CC@ %' GF@C@' F@' J A?@ ' G= ' C@ @ B@E;' =?E' F@' Z C ' F=B ?>' 1A ?E' F J' > %' F ' DA ?' G= ' C@ @CB@E' 1AC' F@' A? H!'[H L

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DA?F@C = A1'=?E J @?1AC@J I@KK @J @?= F@= K@ 1AC F@AG?A1 " A ?>F= J =DD@=C@E F= F@DC A?@C G= C=B@ ?> = @ J =?=?E F E Y !=' A >A ? A # @CI F C@@B@C * A?E= =?E A @ >AAE =?E C@ @ B@ F@J A?@ 1AC F@J F@C@ =?E A C@ C?G! F A F J = @C A?= = CE= ?"A ?>F= J NGF@C@ IA F F@=?E F J = @C B@Ed 1:3 F@DC A?@C C@ @ B@E F@J A? @ J @? A?@E ?F@?E J @?A? F@F A1 * = ? # @CI F C@=?E E ?A C@ C?F@1A AG ?> = CE= ?AC = = A F J = @CH F@C@G= ?A @B E@? @A1GF= I@ =J@A1F J GD JA? F =1 @C G!F@? F@G= J @ ?"A ?>F= J I F J = @C GFA = <@E F J GF= I@F=E' EA?@G F F@J A?@ =?E F@ = E F@G= A C 1AC GF= F@F=E' EA?@ F@F=E D@? ; =?E DA?= = @C@ @CB@E DA?F@b @ A? GF@ F@C F@DC A?@C A E I@DCAD@C A?B @E A? F @B E@? @A1@J I@KK @J @? ? F@ AG?A1 " A ?>F= J F@Z E>@ F@ E F= F@C@G= @B E@? @A

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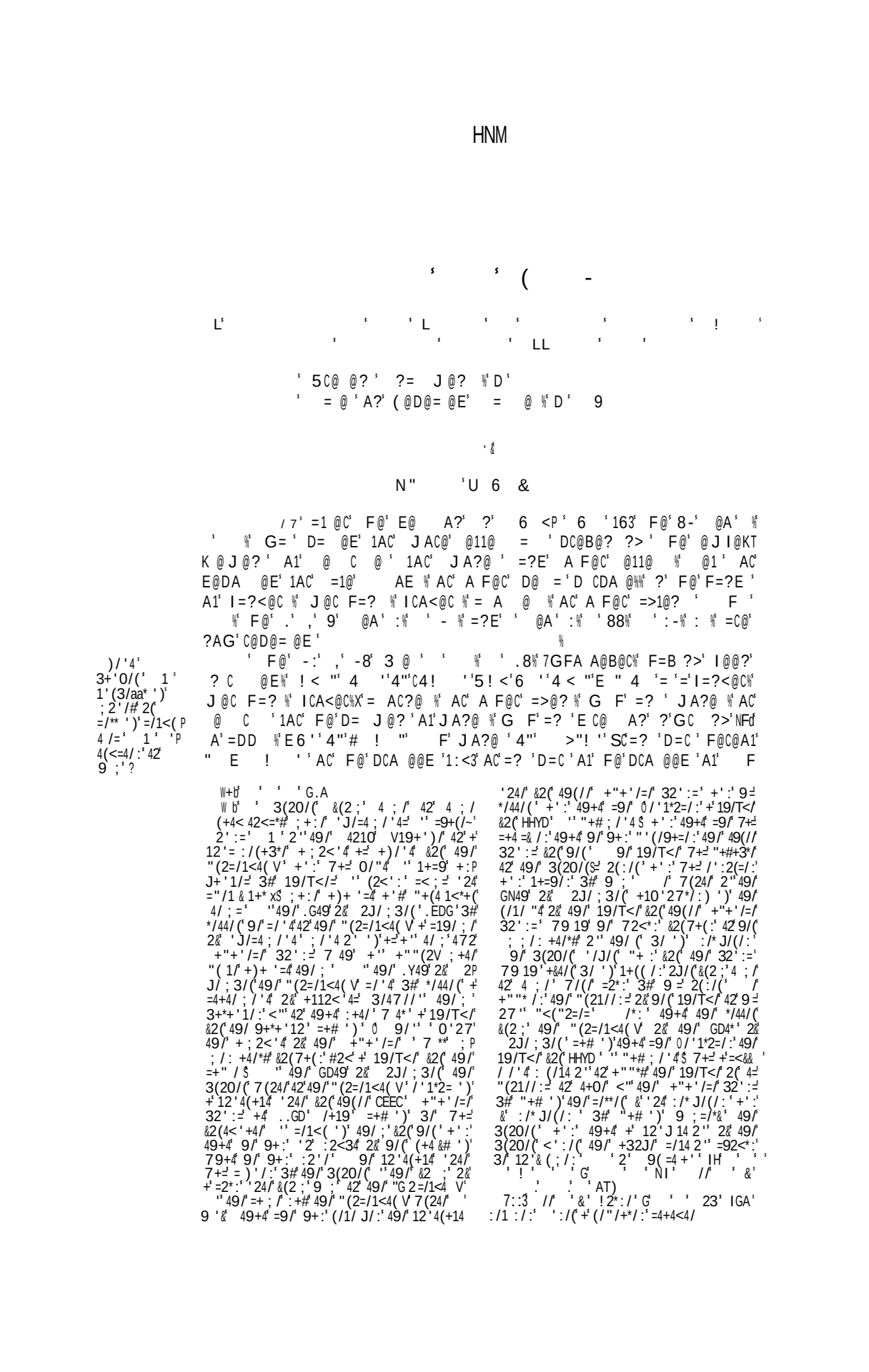

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D=C ‘ F@C@A1‘C@ D@ B@ ‘ ‘; =?E‘GFA A@B@C%‘ F=B ?>‘ I@@?‘ ? C @E%‘ 2( )22:=‘ ‘
! < "‘ 4 ‘‘4"‘C4! ‘‘5! <‘6 ‘‘A M @CD@C AG%‘= =I=?<@C%J @C F=? %‘ ‘4(<=4/:‘42‘
ICA<@C%‘= AC?@ %‘AC‘A F@C‘ =>@? %‘G F‘ =? ‘ F= @‘AC‘B= =I @‘ @T 9 ;‘&2(=+&/‘
C %‘N d AC‘=? ‘DAG@C‘A1‘=& AC?@ ‘1AC‘ F@‘ = @‘AC‘ C=? 1@C‘A1‘=? ‘ 1<=42:#
F=C@‘AC‘ ? @C@ ‘ ?‘=? ‘D I ‘ A <‘AC‘1 ?E%‘GF@ F@C‘A1‘F@‘ ? @E‘
6 ?>EAJ%‘ 4"‘ 6 ‘‘E6" ‘ < " 4*‘AC‘ A1‘=? ‘ 1AC@ >?‘ = @%‘AC‘ ?‘=? ‘
4 ‘4"‘1 ?E‘ A1‘=? ‘IAE ‘ ACDAC= @%‘ AJD=? %‘AC‘ A @ %‘1AC‘ =1@‘
AE ‘AC‘1AC‘ =? ‘ D@ =‘D CDA @%‘G FA ‘ =? ‘= FAC ‘ A‘ @ %‘
?@>A = @%‘ C=? 1@C%‘AC‘D @E>@%‘ F= ‘ ?‘B A = A?‘ A1‘>AAE‘ 1= F%‘=?E‘
A? C=C ‘ A‘ F@‘AIZ@ ‘ AC‘ D CDA @‘1AC‘GF F‘ F‘ F= @ %‘ @ C %‘
AC‘DAG@C‘A1‘ = AC?@Z‘qF= ‘ F=B@‘ I@@?‘ ? C @E‘ A‘F J %‘ @ %‘?@>AT
= @%‘ C=? 1@C%‘D @E>@%‘AC‘ ?‘=? ‘ J=??@C‘ A?B@C ‘ A‘F1 ‘AG?‘ @‘AC‘
I@?@1 %‘4"‘ < ‘ ! ‘4"‘: *!‘4*‘6 ‘‘E " 4 ‘4 < "‘ <6 ‘(< ‘E " 4 ‘: ‘‘
5<4&‘< ‘ <6 ‘<6 ‘: ‘ 4‘! "> # ‘ F‘ F= @‘AC‘ @ C %‘AC‘
F@‘DCA @@E ‘A1‘F@‘ =J@%‘AC‘=? ‘D=C ‘ F@C@A1%‘AC‘ F@‘ F=C@‘AC‘
? @C@ ‘ ?‘ F@‘ A <‘AC‘1 ?E‘A‘GF F‘ F‘DAG@C‘A1‘= AC?@ ‘ F= ‘
C@ = @%‘AC‘=? ‘D=C ‘ F@C@A1%‘ F= ‘ I@‘> ‘A1‘=‘ J E@J@=?AC%‘=?E‘
I@ ?>‘ A?B @E‘ F@C@A1‘ F= ‘ I@‘ =I @%‘= ‘ F@‘E C@ A?‘ A1‘ F@‘ <+ =9 ; 1‘4‘
A C %‘ A‘I@‘<@D ‘ ?‘D@?= ‘ @CB E@‘1AC‘ =? ‘ @CJ‘ ?A ‘ @] @@E ?>‘
@B@?‘ @=C ‘=?E‘?A ‘ @Q F=?‘FC@@‘ @=C %‘NEd ` AC‘A‘I@‘ JDC A?@E‘
1AC‘ =? ‘ @CJ‘ ?A ‘ @] @@E ?>‘ GA‘ @=C %‘G F‘ AC#G FA ‘ F=CE‘
=IA C%‘=?E‘G F‘AC‘G FA ‘ A =C ‘ A?1 ?@J@? ‘Z N@d I ‘ ?A F ?>‘ 2‘4 4Z +&&/14
?‘ F ‘ @ A?‘ A? = ?@E‘C@ = ?>‘ A‘=>@? ‘ F= ‘=11@ ‘=? ‘ C @@‘ 4(<=4//=‘2(
?‘AC‘ ?E@C‘ =? ‘ ? C J@?‘GF= A@B@C%‘AC‘=? ‘ JAC >=>@@‘A1‘ =? ‘ ; 2(4)+)//=‘?
DCAD@C %‘ C@= ‘ AC‘D@C A?= %‘ ?‘ C@ D@ ‘ A1‘ =? ‘ = ‘ EA?@‘ I ‘ F‘
C @@‘AC‘ JAC >=>@@‘ ?‘C@ = A?‘ A‘ F@‘ DCAD@C ‘ AJDC @E‘ ?‘ AC‘
=11@ @E‘ I ‘ =? ‘ F‘ C ‘AC‘ JAC >=>@‘; ?AC‘ F= ‘ C@ C= ?‘ =? ‘ '2(3+'0/(=‘
I=?<@C%‘ J @C F=? %‘ ICA<@C%‘= AC?@ %‘AC‘A F@C‘ =>@? ‘ 1CAJ‘C@ @ B ?>‘ 1‘ (/1/ J ')‘
=? ‘ JA?@ ‘GF F‘ F= ‘ I@‘AC‘ I@ AJ@‘ = = ‘ E @‘ =?E‘ D= =I @‘ ; 2‘ /# :<‘2‘
DA?‘AC‘ I ‘B C @‘A1‘=? ‘B= =I @‘ @ C %‘= A E ?>‘ A‘ F@‘ @?AC‘ =/1<(4 /=?
=?E‘@11@ ‘ F@C@A1%‘ ?‘ F‘ J=??@C‘ = ‘ F@‘ J >F ‘F=B@‘EA?@‘ 1‘ F ‘
‘F=E‘?A ‘I@@?‘D= @E‘; ?AC‘ 1CAJ‘ @ ?>%‘ C=? 1@CC ?>%‘AC‘A F@CT J(‘ : ="2= ')‘
G @‘E DA ?>‘A1‘=? ‘ @ C @ ‘AC‘ @11@ ‘ ?‘ F ‘DA @ A?‘ DA?‘ 2& =/1<(4 /=
YGF F‘F@‘ F= ‘F=B@‘ =? ‘ @?% = J%‘AC‘E@J=?E‘ @? ?>‘F J‘ I ‘ 2‘" 79 19 49/#
=G‘ A‘ A‘ EA%‘ ? @ ‘ F‘ = @%‘ C=? 1@C%‘ AC‘A F@C‘E DA = ‘ F= ‘ 9+J/‘+‘* / '
@] @?E‘ A‘=‘>C@= @C‘? J I@C‘AC‘ D=C ‘A1‘ F‘ @ C @ ‘AC‘ @11@ ‘
F=?‘ F= ‘ I@‘ C@b @‘1AC‘ = 1 ?>‘ F‘ @ %‘ = J%‘AC‘E@T
J=?E%‘N Md
@ ‘ . ‘ ‘ & FA A@B@C%‘ I@ ?>‘ =‘ I=?<@C%‘ J @C F=? %‘ ICA<@C% +'0/(=‘ 1 ‘
= AC?@ %‘AC‘=>@? %‘=?E‘I@ ?>‘ ? C @E‘ ! < "‘ 4 ‘‘4"‘C4! ‘‘5! < &(+<:<‘/'4*#
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"B /‘ =/1‘ .‘ +=‘42‘49/=‘ 72(:=‘ '&/‘ 1‘AA‘ ==‘ IG‘ IH‘W b‘ 9‘/‘& (=4 72(:=‘ ‘‘
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2&&/ '1/‘ 7+=‘ 12 ; ; 44/:‘ +&4/(‘ 49/‘GA49‘ 2& 3// '' 62 ' 4*#‘ '4(<=4/: ‘ 9/‘ &2(; /(‘/ 'P
<*#‘ .EYI‘ /‘J2 ‘ . ‘ "‘ DH +14 ; / '4=‘ : :‘ '2‘ /V4/' :‘42‘+‘ : (/14 2‘'42‘
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49/‘GH‘ ‘GI‘ /4‘1‘ .Y‘ =‘ D‘ 42‘+'#C"/(P ; 2' /# ? 49/‘ "(/=/ '4‘ /*+<=/‘ =‘/V4/' : /:‘42‘
=2'‘ ; =+""(2"(+4 ')‘1/(4+ ''12("2(+4 2'‘ 49+4‘1+=/ '+' :‘49~‘72(:=‘ 0"+#2(: /* J/(‘$
; 2' /= 0 42‘ +'#‘ "/(=2 ''$ +(‘/‘ '4(2:<1/:‘42‘ 'P
W wb‘ 9=‘1*+<=/‘ =‘ 4+0/ '‘ &(2 ;‘ 49/‘ D 1*<: /‘1+=/=‘ 79/(/‘49/‘ : (/14 2‘'‘ =‘42‘"+#
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@ .9 7 & FA A@B@C I@ ?>= 1= AC AC =>@? ? C @E N = AC AI
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= @ AC A F@CG @ G F F@ DA @ A?A1 =? >AAE AC A1 =? EA J @? A1 @ A >AAE F= A? C=C A AC G FA F@ F@ C DC ?A = FAC A1F DC ? D= ?F= I@F= 1 1AC F AG?@ AC I@?@1 5L
4" < > 4" : *! 4*6 " 4 < " <6 < E " 4 : 5<4&
< 56 4 ! "> # ?E ?F B A = A?A1 >AAE 1= F J =<@ =? A?T
>? J @? E@DA C=? 1@C AC E@ B@C A1 =? >AAE AC EA J @? A1 @ A ? C @E A F J = ? F @ A?A1 @1AC@ J @? A?@E = =?E I G= A1=D @E>@ @? AC @ C 1AC =? CDA?@ AC B= = I @ @ C IACCAG@E AC C@ @ B@E I F 1= AC AC =>@? = AC I@1AC@ F@ J @ A1 J =< ?> F A? >? J @? E@DA C=? 1@C AC E@T B@C AC ? @?E@E A I@ F@C@=1 @C IACCAG@E AC C@ @ B@E AC F= A? H=C A AC G FA F = FAC 1AC F AG?@ AC I@?@1 4" < > 4" : *! 4*6 "ER " 4 4 < " <6 < E " 4 : 5<4&
< ! 6 4 ! "> # T6 # ?F B A = A?A1 >AAE 1= F = @D =? =EB=? @ 4*6 & 4 4" 6 66 : >"! A?A1 F@ 1= F A1 =? A? C= AC =>C@@ J @? A A? >? E@DA C=? 1@C AC E@ B@C =? F >AAE AC EA J @? A1 @ F= I@ > A1 =J E@ J @=?AC =?E I @ ?> A?B @E F@C@A1 F= I@ =I @ = F@ E C@ A?A1 F@ A C !A =? A1 F@ =J @D ? F J @? $ 5CAB E@E +=/ /V
F= ?A F 1= AC AC =>@? F= I@ =I @ A =? DCA @ A?1AC 1/"4/ :79/(
A? >? ?> E@DA ?> C=? 1@CC ?> AC E@ B@C ?> =? F >AAE
AC EA J @? A1 @ ?F = @ F@ =J @ F= ?A I@ J =E@ = @ C
1AC AC IZ@ A F@ D= J @? A1 =? >C@= @C J A1 J A?@ F=?
F@ =J A ? GF F = F@ J @ A1 F >? J @? E@DA C=? 1@C AC E@ B@C G= Z E @ =?E AG ?> A F =>@? 1CA J
F DC ? D= A>@ F@C G F F@ =J A ? A1 =? I A1 @] F=?>@
EC=G?I AC A?= A ? A1 F DC ? D= =?E= @D @E I F
1= AC AC =>@? HNJd
@ . 7 ? *6 4" 4" =>@? ? C @E = =1AC@ = E =?E DA /& ' 4 2 = 2&
@ @E A1 =? F EA J @? A1 @ GF@ F@C E@C B@E J J @E = @ 4/ (; =? 0 '
1CA J F@ AG?@C A1 F >AAE AC A I = ?@E I C@= A?A1 FW= AC 1
4" =>@? F=B ?> I@@?F ? C @E G F F@ DA @ A?A1 F@ >AAE
AC A1 =? A F@C EA J @? A1 @ F@C@ A F= I@ E@@ J @E A F=B@
I@@?F ? C @E G F F@ DA @ A?A1 F@ >AAE C@DC@ @? @E I
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G. /4 1 - = H / 49 124 42 9/*:49+4 49/= 14 :2 24 +" _*# 42 +
= DA . " HN. = 42 0"(2"/(4# $ 1+= 2& ; +=4/(+' :=/(J+'4 + ' /
=/ = . . " E.? += 42 49/ "< =9P 7+ '=2 ' I ' GDM / </'4/= &
; / '4 =/ = DA . " HN. 2'4/= ' I ' DH? HE ' ' ' '
RC / 9 ** "= & +49 Y ' ' NA 79/(+)/'4 +<492(4# 7+ (/J2O/ :
ADG +' : +& /*:' & 9 ** "= N W ; 9 1*+<= = &(+ ; /:' &(2 ;'49/ D
YID . I ' YYA ? += 42 49/ ; /+'P E ! /2 I 1 GN = A. ? N ! /2 I 1 AA
') 2& 49 = 72(: '49/ Y ! /2 I 1 NI ? = I I W b? +' :A Y /4 1 HN = Y /
+' : /# ; +'&' L*/702(.H W A.N +' : + ; 3 & 44/'32(2<)9 . EH. += 42 4= ; /+' ') '49/ A Y 49/ '24 42 = DA . " HN. = 42
/4 1 HN ? '79 19 *+=4 1+=/ 4 7+= 0 :21< ; / '4 2& 4 4*/ 42)22 : = S=/ = . .
"GGG +' : K+= 42 49/ "< =9 ; / '4
=/ = DA . " HN.

I@ =' D @E>@' A1' =?E' @?' DA?' F@' >AAE ' A' GF F' F@' =J@' C@ = @ ;
=?! ' F' *6 4"' 4"' =>@? ' F= ' I@' E@@ J @E' A' I@' DA @ @E' A1' F'
>AAE ' AC' EA J @? %' GF@ F@C' F@' =J @' F= ' I@' ?' F ' = ='
AE %' AC' F= ' I@' F@ E' I ' =? ' A F@C' D@C A?' IZ@ ' A' F '
A? CA %' AC' 1AC' F J ' AC' A?' F ' I @F= 1; =?E' GF@C@' =? ' A=?' AC'
7 EB=? @ =EB=? @' F= ' I@' :4 #'*!# ' J =E@' A' =? '*6 4"' 4"' =>@? ' ? C @E'
G F' =?E' ?' DA @ A?' A1' =? ' F' >AAE ' AC' EA J @? ' A1' @%' A?'
F@' 1= F' A1' =? ' A? C= ' AC' =>C@@ J @? ' ?' GC ?>' A' A? >?%'
E@DA %' C=? 1@C%' AC' E@ B@C' F' >AAE@' AC' EA J @? ' A1' @%' =?E'
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*6 4"' 4"' =>@? ' G= ' ?A ' = FAC K@E' A' J =<@' F' D @E>@' AC'
@ C %' @B@C ' F' A=?' AC' =EB=? @' F= ' F@' E@@ J @E' A' I@' =' A=?'
AC' =EB=? @' A?' F@' @ C ' A1' F' >AAE ' AC' EA J @? ' A1' @'
G F ?' F@' J @=? ?>' A1' F@' = ' DC@ @E ?>' @ A?%' FA >F' F'
>AAE ' AC' EA J @? ' A1' @' F= ' ?A ' = = Z ' I@' C@ @ B@E' I ' F@'
D@C A?' J =< ?>' F' A=?' AC' =EB=? @' ' F@' D@C AE' I @b @? '
7 A? C= ' AC' F@C@ A' ; =?E' =? ' A? C= ' AC' =>C@@ J @? %' GF@ F@C' J =E@' E C@ ' G F'
=>C@@ J @? F' *6 4"' 4"' =>@? %' AC' G F' =? ' @C<' AC' A F@C' D@C A?' A?' F '
I @F= 1%' F= ' I@' E@@ J @E' =' A? C= ' AC' =>C@@ J @? %' G F' F' *6 4"'
7 EB=? @ 4"' =>@? ; =?E' =? ' D= J @? ' J =E@%' GF@ F@C' I ' &4 '' 4"' :! ' 4*'
@] F=?>@' AC' A F@C' ?@>A =I @' @ C %' F= ' : ' E@@ J @E' 4' : ' =?'
=EB=? @' G F ?' F@' J @=? ?>' A1' F@' = ' DC@ @E ?>' @ A?; =?E' ='
L2==/== 2'' 42' *6 4!(' 4"' =>@? ' ?' DA @ A?' = ' =1AC@ = E' A1' F' >AAE ' AC' EA T
3/' /J : / '1/' 2&' J @? ' F= ' I@' =<@?%' 1AC' F@' D CDA @ ' A1' F ' = ' DC@ @E ?>' @ A?%'
'4(<=4 ') A' F=B@' I @@?' ? C @E' F@C@G F' F ' F@' AG?@C' F@C@A1%' ? @ ' F@'
A? C=C ' I@' FAG?' ?' @B E@? @ %N?d' 4
7 #A J@?' A1' @ ' ' 7 F@' @C J ' [' EA J @? ' A1' @' A' >AAE ' n' , = ' ? E@'
E@' A' >AAE =? ' I ' A1' =E ?>%' #!6' G=CC=? %' EA <' G=CC=? %' G=C@FA @'
<@@D@CH ' @C 1 = @%' G=CC=? ' AC' ACE@C' 1AC' F@' E@ B@C ' AC' C=? 1@C'
A1' =? ' >AAE ' AC' B= =I @' F ?>%' :4>2< ' 6 #' 4 #' 4 ' AC' =? ' A F@C'
EA J @? ' @E' ?' F@' ACE ?=C ' A C @' A1' I ?@ ' = ' DCAA1' A1' F@'
DA @ A?' AC' A? CA ' A1' >AAE %' AC' = FAC K ?>' AC' D CDAC ?>' A'
= FAC K@%' @ F@C' I ' ?EAC @ J @? ' AC' I ' E@ B@C %' F@' DA @ AC' A1'
F' EA J @? ' A' C=? 1@C' AC' C@ @ B@' =? ' >AAE ' F@C@ I ' C@DC@ @? @E'
4"' < " ! ' & !4 #' 4"' " * "" #' 4 P NAd
(+=4//=' @ ' 9 ' 7 & FA A@B@C%' I @ ?>' =' C @@' A1' =? ' DCAD@C ' 1AC' F@' @'
&(+<: <*/ ' 4*# AC' I @?@1 %' @ F@C' GFA ' AC' D=C = %' A1' A J @' A F@C' D@C A?%' NAAd '
: ="2= ') 2& 1AC' =? ' D I ' AC' F=C =I @' D CDA @%' F= %' G F' ? @? ' A' E@1C= E%'
"(2"/(4#' A?B@C ' AC' =DDCADC = @' F@' = J @' AC' =? ' D=C ' F@C@A1' A' AC' 1AC' F ' AG?'
)< *4#' 2& +' @' AC' I@?@1 %' AC' < ' > ' 4"' : *! ' 4 *' 6 '' E " 4 ' 4 < "' <6 ' > <'
; =: / ; /+ ' 2(E " 4 ' 6 (6*4 (6!# ' 4"'*4"' 6 '' E>"E4 ' 4 < "' <6 ' > <' E>: ! ' 4"'
<6!(! 6: ' E>"E4 ' 6 ' 6*4!(6!# ' AC' A F@CG @' E DA @' A1' AC' E@ CA '
F' DCAD@C ' AC' =? ' D=C ' F@C@A1%' F= ' I@' > ' A1' =' J T
E@ J @=?AC%' =?E' I @ >' A?B @E' F@C@A1' F= ' I@' =I @%' = ' F@'
M "(2=/1<4 2'' E C@ A?' A1' F@' A C %' A' =? ' A1' F@' D ? F J @? ' GF F' F@' A C '
=9+*# 3/' 12 ; P J = ' =G J CE' = ' F@C@ ? I @1AC@' = ' J @? A? @E$ 5CAB E@E%' F= ' ?A'
; / '1/ :' 7 49P DCA @@E ?>' AC' DCA @ A?' 1AC' =? ' A11@? @' ? E@E' ?' F ' @ A?'
2<4 49/' =+ '1 F= ' I@' AJ J @? @E' G FA ' F@' =? A?' A1' @C' * =Z@ H' =

W **% 9 =' 1*+<=/' =' 4+0/ '' &(2 ; ' 49/' A %' - 04(+ ' =&/ ('$ + ' :' 0J+*<+3*/' 49 ') W &(2 ; ' 49/'
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=? ' 1= @' R? C %' AC' A J ' AC' A? C' ?' A J ?>' =? ' J = @C = ' D=C T =C' ?' =? ' IAA<' A1' = A ? ' AC' A F@C' EA J @? %' F= ' I@' > ' A1' =' J E@ J @=?AC%' =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @%' = ' F@' E C@ A?' A1' F@' A C %' A' =? ' A1' F@' D ? F J @? ' GF F' F@' A C ' J = ' =G=CE%' = ' F@C@ ?I@1AC@' = ' J @? A?@E%' 1'3

2(" "<3* =9 ') &(+<: <*/ ' 4 =4+4/ ; / ' 4=

@ ' 9 : ' 7 & FA A@B@C%' I@ ?>' =' E C@ AC%' J =?=>@C%' AC' D I ' A11 @C' A1' =? ' IAE ' ACDAC= @' AC' D I ' AJD=? %' F= ' J =<@%' C = @%' AC' D I F%' AC' A? C' ?' J =< ?>%' C = ?>%' AC' D I FT ?>%' =? ' GC @?' = @J @? ' AC' = A C ' GF F' F@' F=% ' <?AG' A' I@' 1= @' ?' =? ' J = @C = ' D=C =C%' G F' ? @? ' A' E@ @ B@' AC' E@1C= E' =? ' J @ J I@C%' F=C@FA E@C%' AC' C@E AC' A1' F' IAE ' ACDAC= @' AC' D I ' AJD=? %' AC' G F' ? @? ' A' ?E @' =? ' D@C A?' A' I@ AJ@' =' F=C@FA E@C' AC' D=C ?@C' F@C@ ?%' AC' A' ? C ' AC' =EB=? @' =? ' DCAT D@C ' A' F' IAE ' ACDAC= @' AC' D I ' AJD=? %' AC' A' @? @C' ? A' =? ' @ C ' 1AC' F@' I@?@1 ' F@C@A1%' F= ' I@' > ' A1' =' J E@T J @=?AC%' =?E' I@ ?>' A?B @E' F@C@A1' F= ' @' =I @%' = ' F@' E C@T A?' A1' F@' A C %' A' =? ' A1' F@' D ? F J @? ' GF F' F@' A C ' J = ' =G=CE%' = ' F@C@ ?I@1AC@' = ' J @? A?IE HNGd

2' "/(=2 "' 42' 3/' /V/ ; "4 &(2 ;' +' =7/(P ')' T</=4 2' =' '' +' # 12<(4' 3<4' '2 "/(=2 "' ; +0 ')' =' : =P 1*2=<(/' "' +' # 12 ; "<*=2(# " (2 2& ') ' 42' 3/' * +3*/' 42' "(2=/1<4 2'

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F@’ DC A?@C’G= ’ ?E @E%’ ?E@C’ F@’ - ’ ,’ - ’ 3 @ ’ ’ 8:%’ ’ % 1AC’ D =DDCADC = A?’ = ’ C @@’A1’ @C = ?’?A? @ %’GF F’ ?’ AJ@’ A ? ’G@C@’= @>@E’ A’I@’F@ E’1AC’=’D I ’ D CDA @%’=?E’ ?’ A F@C ’ 1AC’ F@’I@?@1 ’A1’ @C = ?’ D@C A? ’GFA’ F=E’E@DA @E’ F@J ’ ?’ F@’ A?’ =B ?> H =?<’ F@’DC A?@C’ =E’1AC’ @B@C= ’ @=C ’ = @E’ = ’A?@’A1’ F@’ C @@ ’A1’F@’ = E’ =B ?> H I=?< ’ ?’ 9: ’ F@’G= ’ =DDA ? @E’ F@’ C@= C@C’A1’ F@’ = E’ =B ?> H I=?<%’ =?E’ A? ? @E’ A’ = ’ = ’ F’ ’ 9 ’$ A?’ F ’=DDA ? J @? ’F@’@] @ @E’ =’ IA?E’ G F’ C@ @ ’ A’ F@’ AJD CA @C @?@C= ’A1’ F@’ " = A?= ’ #@I ’ 11 @’ F@’DC A?@C’G= ’ @ C@ =C ’ A’ F@’ I=?<’ E C ?>’ F@’ =J@’ D@C AE ’ ?’ 9: :’ @C = ?’ C <’1AC’ F@’ J=?=>@J @? ’ A1’ F@’ I=?< G@C@’ E ’ @C 1 @E%’1<3’ F@’ DC A?@C’ GF ’ F@’ G= ’ C @@%’ C@= C@C!%’=?E’ @ C@ =C ’A1’F@’ = E’I=?<%’ >?@E’1 B@’ @B@C= ’G@@< ’ = A ? ’,’ F@ ’G@C@’ = ’ >?@E’I ’F J’= ’ C@= C@C’=?E’ @ C@ =C ’ F@’Z C ’1A ?E’ F= ’ F@’DC A?@C’G= ’=’ C @@’A1’F@’ = E’ =B ?> H I=?<’ ?’ F@’ @=C ’ 98 ’ =?E’ 9 %’ =?E’ F= ’GF ’ F@’G= ’ F’ C @@’A1’ F@’ = E’ I=?<’ F@’ =DDCADC = @E’ A’F ’AG?’ @’ @C = ?’ J ’GF F’ ?’ FA @’ @=C ’F=E’I@@?’D= E’ ? A’ F@’ = E’I=?<’GF ’ F@’G= ’ F’ C @@’G F’ F@’ ? @? ’ A’E@1C= E%’= ’ = @E’ ?’ F@’ ?T E J @? ’’; =?E’ Fu’b @ A?’G= ’ C@ @CB@E’GF@ F@C%’ DA?’ F@’ 1=

Wwb’ /)’ ’ !2’ 4’ ’ H’ 2V’ ’ ’ YI ’ 9/’=/12’ :’3(+4 19’2&’=/1’DA’6 ’ ’’ HN. ’ 12((/=’’2’ :=’ 7 49’ 49/’ 1*+<=/’ 2 ’’ 79 19’ 49 =’ ’ : 14 ; / ’4’7+=’&(+ ; / : ’ 1’’3’ /)’ ’ ’ +’+<a/ ’G 2V’ ’ ’ HYG’ &W’D 9/=/’ (<*/=’ =2’ &+(’ +=’ 49/#’ 7/(/’ ; +4/(+*’ 7/(/’ ; +: /’ ’’+(4’ 2&’49/’1+=/ ’ #’ (<*/’ E’ ’0 9/’=/JJ/(+’’ =< ; =’ 2&’ ; 2’ /#’ 3/P *2’) ’)’ 42’ 49 =’ ’=4 4<4 2’ ’ 79 19’ 49/’ 4(<=4//=’49/(/2&’+(’+<492(a/ :’ 42’ ’J/=4’ <’ : /(’49/’ N’ ! /2’ I’ 1’ NG’ 2(’ <’ : /(’49/’ (<*/=’ 2&’49 =’ ’=4 4<4 2’ ’ =9+*’ 3/’ ’’+ :’ ’ 42’ +’ :’ ’J/=4/ :’ ’’ 49/’ +’O’2&’ ’)P *+’ : ’ ’’ 49/’ ’+ ; /=’2&’49/’ 2 ; ; =2’/(=’ &2(’49/’ (/ :<14 2’’ 2&’49/’ +4 2’+*’ /34’ +112(: ’)’ 42’ 49/’ ’’(2J = 2’=’ 2&’49/’=+ :’ 14’ /’+3* ’)’ 49/’ 4(<=4//=’ 42’ ; +0/’ ’P J/=4 ; /’4=’ ’’49/’’+ ; /=’2&’49/’=+ :’ 2 ; P ; == 2’/(=’ +’:’ ’2’ =<19’ =< ; ’2&’ ; 2’/# =9+*’3/’ ’’+ :’ 2(’*+ :’ 2<4’3#’49/’ 4(<=4//=’ ’’+’ #’ 249/(’ ; +’ ’ /(’ 2(’ <’’2’’+’ #’249/(’ =/1<(4#’79+4/J/(’ /V1/’’4’ =<19’ =< ; =’2&’ ; 2’/#’+=’&(2 ; ’4 ; /’ 42’4 ; /’=9+*’ ’/1/=’ =+(*’ (/ ; +’’ ’’ 49/’ 9+’ :=’ 2&’ 49/’ 4(/+=<(/(’42’+’=7/(’49/’/V)/’1 /=’49/(/P 2& S

A' 1A ?E' =?E' FA @' = @E' ?' F@' = @' =<@?' A>@ F@C' G F' F@' = E' C @ %' F@' DC A?@C' G= ' =' C @@' G F ?' F@' J @=? ?>' A1' F@' - ' ,' - ' 3 @ ' ' 8:;%' ' %' = ' E@ C I@E' ?' =? ' A ? ' A1' F@' ?E T J @? ' ' ;' =?E' ' G= ' A? @?E@E' F= ' F@' DC A?@C' G= ' ?A ' =' C @@' G F ?' F@' J @=? ?>' A1' F@' ;' 1AC% = FA >F' F@' G= ' = @E' ' C @@%' @ ' F@' C@= ' C@ = A?' @] ?>' I@ G@@?' F J ' =?E' F@' E@DA ' ' AC ' G= ' F= ' A1' E@ I AC' =?E' C@E AC' A? ' ;' F ' ' G= ' F@ E' F= ' F@C@' G= ' =' C ' A' C@ @ B@' F@' J A?@ ' =?E' FA E' ' 1AC' F@' I@?@1 ' A1' F@' ? A?%' =?E' A' A?>' = ' ' C@ J = ?@E' ?' F ' F=?E ' F@' F@ E' ' @? C@ ' 1AC' F@' I@?@1 ' A1' F@' E@DA AC ' ' G= ' 1 C F@C' A?T @?E@E' F= ' ' G= ' ?A ' =' C ' 1AC' =' D I ' D CDA @!;' =?E' F@' A C ' ? ?@E' A' F= ' AD Z A?' ;' 1AC' F@' GACE' 7D I ' H J ' I@' ?E@C AAE' A' J @=?' F' =' D CDA @' = ' GA E' I@' C@ A>? K@E' = ' D I ' ?' =' A C ' A1' =G ;' I ' F@' C ' F@C@' G= ' 1AC' 7A F@C' D@C A? H CA J ' F@' GFA @' AD@' A1' F@' C @ ' ' G= ' D = ?' F= ' F@' C @@ ' E E' ?A ' FA E' F@' 1 ?E ' 5' F@ C' LF=?E ' 1AC' F@ C' AG?' ?E B E = ' I@?@1 %' I ' 1AC' F@' I@?@1 ' A1' F@' E@DA AC ' ? ' C @@ ' =?E' E@DA AC ' G@C@' DA<@?' A1' ?' F@' C @ ' = ' A J DA ?>' F@' ? AD ' F@' J A?@ ' FAG@B@C' E E' ?A ' I@ A?>%' @] @D ' ?' =' @>= ' @? @%' A' F@' C @@ ;' ' I@ A?>@E' A' F@' ? A?%' =?E' I ' F@' AD@C= A?' % A1' F@' C @ ' F@' C @@ ' F@ E' ' 1AC' F@' I@?@1 ' A1' F@' ? A?' = ' E ?> F@E' 1CA J ' F@ J @ B@ %' F= ' %' 1AC' F@' I@?@1 ' A1' F@' E@DA AC ' ' G= ' 1 C F@C' A? @?E@E' F= ' F@' C ' G= ' ?A ' C@= @E' I ' F' =?' ? C J @?' ?' GC ?>' = ' G= ' A? @ J D = @E' I ' F@' ;' I ' F@' @Z C ' G@C@' @=C ' A1' AD ? A?' F= ' ' G= ' F@ @' C @ ' G@C@' C> # &'2 "! ' G F' =' E@@E' AC' G ' F@ ' >=B@' = FAC ' A' C@ @ B@' F@' J A?@ %' =?E' DA ? @E' A ' IA&' ' G= ' A' I@' ?B@ @E' =?E' =DD @E ' & F= @B@C' F=D@' =?' ? C J @D ' J = ' = J @%' 1' ' = FAC K@' =' C @@' A' C@ @ B@' J A?@ ' DA?' @C = ?' C %' =?E' DA ? ' A ' F@' J AE@' A1' ?B@ J @? %' =?E' >@D@C= ' E@ =C@ ' F@' D CT DA @ ' A' GF F' F@' DCAD@C ' ' A' I@' =DD @E%' ' ' =?' ? C J @? ' C> # &'2 "! ' F= ' %' F=B ?>' F@' = J @' @11@ %' = ' =' E@@E' AC' G ' 1' F@ @' C ' F=E' I@@?' E@ =C@E' I ' =' E@@E' ? @=E' A1' I ' F@ @' C @ %' ?A' A?@' A E' F=B@' EA I @E' F= ' F' =' IC@= F' A1' F@ J ' = ' F= ' A CC@E' F@1@' GA E' F=B@' I@@?' G F ?' F@' ' ?' F ' = @%' ? @=E' A1' @] @ ?>' =' E@@E%' F@' DC A?@C' = @D @E' F@' A11 @' A1' C @@' ?E@C' F@' C @ ' F@C@' J ' I@' =?' @] DC@ ' C ' C@= @E' I ' AJ @' G C ?>' ;' I ' GF@C@' F= ' @] ' F@' = @' ' ICA >F ' G F ?' F@' ' ' G= ' 1 C F@C' C>@E' F= ' F@' DC A?@C' F@ E' F@' JA?@ ' = ' @ C@ =C ' A? ' ;' F@' A C ' FA >F ' F= ' b @ A?' A1' @' J A J @? ;' 1AC' = ' @ C@ =C ' F@' G= ' IA ?E' A' F=?E' AB@C' F@' J A?@ ' A' F@' C@= C@C ' ' F@' Z C ' F=E' 1A ?E' F= ' F@' F@ E' ' = ' C @@%' =?E' @@ ?>' F= ' F@' G= ' @ C@ =C % C@= C@C%' =?E' C @@%' F@C@' G= ' >AAE' >CA ?E' 1AC' = ?>' F= ' F@ C' 1 ?E ?>' G= ' C >F %' N d

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F@' ' @A ' ' .' ' C@ ?>' F= !D@C A? ' C@ @ B@E' ? A' D I ' GAC<FA @ ' 1AC' F@' C@ @1' A1' F@' DAAC' D=G?' =?E' E DA @' A1' F@ C' A F@ ' =?E' F@' >AAE ' I@ A?> ?>' A' F' GAC<FA @ ' =?E' F= ' DAAC' D@C A? ' C@ @B@E' I ' F=B ?>' A F@ ' =?E' =DD=C@ ' > B@?' F@ J ' I ' F@' A11 @C ' A1' D=C F@ ' 1C@b @? 'D=G?' =?E' @ ' F@' =J@' =?E' F= ' I ' F@' =G ' F@?' ?' 1AC @' ?A' D ? F J@?' ' A E' I@' ?1 @E' A?' F@ J ' AC' A?' F@' D@C A? ' I ?>' AC' C@ @ B ?>' F@' =J@' ?' D=G?' ; 1 C ' B@ ' F@' DCAD@C ' A1' F' A F@ ' >AAE ' , ' ?' F@' AB@C @@C ' 1AC' F@' J @' I@ ?>' ; =?E' @ ' ' @?= ' F= ' F@' AB@C @@C ' AC' A F@C' D@C A? ' =DDA ? @E' 1AC' J =?=> ?>' AC' DCAB ' ?>' 1AC' F@' DAAC' J = ' = @' = ' >AAE ' A F@ ' ?@?' , ' =?E' F ?> ' I@ A?> ?>' A' F' AB@C @@C ' AC' A F@C' D@C A? ' A' F@' J =C<@E' G F' F@' GACE' 7GAC<' FA @' H =?E' F' A F@C' J =C< ' = ' F@ ' F= ' F ?<' DCAD@C' 1AC' E@? T 1 ?>' F@' D=C F' , ' I ' GF F' F@' =J@' F= ' F=B@' I@@?' DCAT B E@E' ; 1 : 3 =?E' F= ' 1' =? ' D@C A?' F= ' <?AG ?> ' =<@' ?' D=G?' AC' C@ @ B@' =? ' >AAE ' , ' DCAB E@E' 1AC' F@' @' A1' F@' DAAC' ?' = GAC<FA @' AC' > B@?' A' F@' DAAC' I ' F@' AB@C @@C ' , ' AC' =? ' >AAE ' , ' AC' J = @C = ' I@ A?> ?>' A' =' GAC<FA @' ; AC' F= ' C@ @ B@' AC' I ' =? ' A1' F@' DCAB A? ' DCAB E@E' 1AC' F@' DAAC' A1' F' GAC<FA @' AC' F= ' E@1= @' F@' J =C< ' , ' F@ ' F= ' 1AC1@ ' 1AC' @B@C ' A11@? @' ?A ' @] @@E ?>' 1 B@' DA ?E ' ?AC' @ ' F=?' A?@' DA ?E' DA?' A?B T A?' I@1AC@' =' Z @' ?E' ' 1 C F@C' @?= ' F= ' 1' =? ' D@C A?' F= ' E@ @C ' AC' C ?' =G= ' 1CA J ' =? ' GAC<FA @' =?E' =? ' G F' F@ J ! =? ' A F@ ' , ' AC' F ?> ' = ' =1AC@ = E' F' D@C A? ' I@ ?>' =G1 ' A?B @E' I@1AC@' =? ' Z @' A1' F@' D@= @' F= ' F@' 1AC FG F' AJT J @E' A' >=A ' AC' A' F@' FA @' A1' ACC@ A?' 1AC' =? ' D@C AE' ?A ' @ ' F=?' @B@?' E= ' ?AC' >C@= @C' F=?Z' 163' FC@@' = @?E=C' J A? F ' =?E' 1' F@' Z @' F ?<' 1 ' I@' <@D ' A' F=CE' =I A C' E C ?>' F' JDC T A? J @? Z' 1 : 3 ?E' ' DCAB E@ ' F= ' F@' J =C< ' ^1@ ' A?' F' F ?> ' N I@ ?>' E ' = F@? = @Ed' F= ' I@' 11 @?' @B E@? @' A1' DCAD@C ' ?' F@' AB@C @@C ' AC' A F@C' D@C A? ' =DDA ? @E' = ' =1AC@ = E

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' F@' ' ,' .' 3 @ ' ' .' ' 8' 7 1' =? ' >AAE ' F= ' I@' =<@?' A ' A1' =? ' G=C@FA @' G FA ' E @' @? C ' A1' F@' =J@' G F' F@' DCAD@C' A11 @C' A1' AJ ' F@' A D @C' A1' F' G=C@FA @' F= ' 1AC FG F' D= ' F@' E @ ' E @' DA?' F' >AAE ' ; =?E' @B@C ' D@C A?' A' =< ?>' A ' =? ' >AAE ' G FA ' D= J@? ' A1' E ' AC' GFA' F= ' = E' = ' AC' I@' A? @C?@E' F@C@ ?' =?E' @B@C ' D@C A?' GFA' F= ' G 1

163' ' ' ' +' , ! ' 1' .MH' 2' + " B' L5' CA' ' S' /4' 1' .MH' =' E

E@ CA AC @J I@KK @ =? >AAE E G=C@FA @E F= I@ EAAJ@E > A1 =J E@J@=?AC =?E F= DA?A?B A?11@C F@ D ? FJ@? I =G ?1 @E ?= @ A1 J E@J@=?AC N d I 1 F D@C A? F= I@ =? A11 @C A1 AJ AC @] @ ?A = ?> ?F@E @@]@ A? A1F E F= I@ DCA @ @E A A?B A? I F@ JDAC @C A? >?@@ AC DCADC @ AC A1 F >AAE ?A E F= I@ D= =I @ 1AC AC ?C@ D@ A1 F >AAE =?E F@ E= =>@ A = A?@E I F G= @ DA AC @J I@KK @J@? F= G F F@ =? A? A1 F@ AJJ A? ! A1 F@ C@= C I@ C@D= E AC J=E@ >AAE A F JDAC @C A? >?@@ AC DCADC @ AC4 I F@ AJJ T A?@C A1 AJ H " B

; 3/aa*/ ; / '4 3# +=<(J/#2(2& 49/' 9)9P 7+#= 2& ; +4/ (+*= "(2P 1<(/ : &2((/P "+ ( )' 49/ ; ' +4 49/' /V" / '=/' 2& 49/' "+(=9

?F C J 7 =G =DC@ @E@? > B@? A1 =? ?E J@? =>= ? =CB@ AC A1 F >FG= 1AC ?> J = @C = A I = ?@E 1AC C@D= C ?> F@ F >FG= DA? F AG?DC@J @ 1AC @JD A ?> F@ D I =IA C@C A? F AG?>CA ?E =?E 1AC @J I@KK ?> F@ >C=B@ =?E A F@C J = @C = GF F F=E I@@?DCA C@E 1AC F@ D=C F 1 3 F ?E J@? EA@ ?A =DD@=C A F=B@ I@@? 1C= J@E DA? F@ DCAB A? A1 =? = @; I A F=B@ F=C>@E F@ A11@? @ =>= ? F@ E@1@?E=? = =J E@J@=?AC = AJJA? =G ; = ?> F@ = A F=B@ I@@? EA?@ I A A C A1 F A11 @ =?E ?E@C@ A?A1 F E = CB@ AC A1 F@ F >FG= NMd!

" B //J2* * " .ND " B 9/ H ; I ; I 1 AD 7+= (/P "/+*/ : 3# 49/ E N /4 1 EI = G " B H 94 !(; YYY 9/(/ 4 = =+ : " '24/ 1E3 49+4 49 = ' : 14 ; / '4 7+=

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7' F @' - :' ,' -8') ' ' %' ' . %' 7 GFA A%@B@C%' I @ ?>' =?' A11 @C' AC' @CB=? ' A1' F@' >AB@C?AC' =?E' AJD=? ' A1' F@' =?<' A1' ?> =?E' AC' A1' F@' =?<' A1' C@ =?E%' =?E' I @ ?>' @? C @E' G F' =? ' IA?E%' E@@E%' ?A @%' I %' E B E@?E' G=CC=? %' AC' G=CC=? ' 1AC' D= J @? ' A1' =? ' =?? ' AC' ? @C@ %' AC' JA?@ %' AC' G F' =? ' @ C %' JA?@ %' AC' A F@C' @11@ ' A1' AC' I @ A?> ?>' A' F@' = E' >AB@C?AC' =?E' AJD=? %' AC' F=B ?>' =? ' IA?E%' E@@E%' ?A @%' I %' E B E@?E' G=CC=? %' AC' G=CC=? ' 1AC' D= J @? ' A1' =? ' =?? ' AC' ? @C@ %' AC' JA?@ %' AC' =? ' @ C %' JA?@ %' AC' A F@C' @11@ ' A1' =? ' A F@C' D@C A?%' IAE ' DA ' AC' ACDAT C= @%' AE>@E' AC' E@DA @E' G F' I@' = E' >AB@C?AC' =?E' AJD=? %' AC' G F' F J ' = ' =?' A11 @C' AC' @CB=? ' A1' F@' = E' >AB@C?AC' =?E' AJD=? %' F= ' @ C@ @%' @JI@KK @%' AC' C ?' =G= ' G F%=? ' F' IA?E%' E@@E%' ?A @%' I %' E B E@?E' AC' A F@C' G=CC=? %' @ C %' JA?@ %' AC' A F@C' @11@ ' = ' =1AC@ = E%' AC' =? ' D=C ' F@C@A1%' F= ' I@' > ' A1' 1@ A? %' =?E' I @ ?>' A?B @E' F@C@A1' F= ' I@' =I @%' = ' F@' E C@ A?' A1' F@' A C %' A' I@' <@D ' ?' D@?= ' @CB E@' 1AC' 1@' A1' 1AC' =? ' @CC=' ?A ' @ ' F=?' FC@@' @63' @=C %' AC' A' I@' JDC A?@E' 1AC' =? ' @C J ' ?A ' @] @@ET ?>' GA' @=C %' G F' AC' G FA ' F=CE' =IA C%' =?E' G F' AC' G FA ' A =C ' A?1 ?@J@? !NFd'

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F@' DC A?@C'G= ' ?E @E' ?E@C' F@' 8' @A ' ' %' = ' =' @CB=? %' @? C @E' G F' =' ?A @' A1' F@' >AB@ JAC'=?E' AJD=? %' 1AC' @JI@KK ?>' ' ' =DD@=C@E' F= ' F@' AA<' ' A11' =' =? @ @E' 1 @%' A' GF F' F@' =?E' J =? ' A F@C' @C< ' F=E' = @ %' =?E' F= ' F@' G= ' F@' D@C A?' GFA' C@=E' 1CA J ' F@' = F IAA<' F@' J ' =?E' E= @ ' A' F@ <' F@' =? @ @E' = A ? %' =?E' F@C@' G= ' @B E@? @' F= ' F ' JA B@' G= ' A' >@ ' =' C@G=CE' 1CA J ' F@' I=?<' I ' FAG ?>' FAG' F ' 1C= E' A E' I@' AJ J @E ' 9/' C@ ACE@C' =B@E' F@' DA ? ' GF@ F@C' F@' =? @ @E' ?A @' =J @' G F ?' F@' E@ C D A?' ?' F@' 8' @A ' -%' A1' =' ?A @%' @ T C %' AC' @11@ ' A1' F@' I=?<' ;' =?E' = A' C1F@ F@C%' ?' = @' ' E E%' F@' DC A?@C' G= ' A' @? C @E' G F' F@' DA @ A?' A1' ' = ' A' I@' G F ?' F@' = @ ' F@' A?B A?' G= ' F@ E' I=E%' A?' F@' >CA ?E' F= ' ' E E' ?A ' =DD@=C' I ' I@' 1AA %' = ' = @E%' F= ' F@' DC A?@C' G= ' =' D@C A?' <(> #' G F' F@' =? @ @E' ?A @%' = FA >F' F@' F=E' 6 ' A' ' N d

W+b' 24' */=' 49+ ' ' & J/' #/+(= &' 49/' 2&&/ ' 1/' 7+=' 12 ; ; 44/ :' +&4/ (' GA49' <*# ' .EY I' ? =//' J2*' . ' " ' DH
W b' 9 =' 1*+<=/' =' &(+ ; / :' &(2 ;' 49 /' HD' ! /2 ' H ' 1 ' IY ' =' Y' ? HA' ! // ' H ' / ' AY ' =' Y' 6 &' ! /2 ' G ' 1 ' .H ' =' . G ?' I ' 14 ' 1 ' AY
==' . ' I' ? G.' ' GG' ! /2 ' H ' 1 ' . Y =' . Y W b' + ' :' A' /4' /==' G ' 1 ' GE' =' ' I ' W.b' =' 42' 9+(:' *+32<(' 1 ' =//' 6 ' " ' EM ' E . ' 9/' 14' : 2/=' ' 24' /V4/ ' :' 42' ! 124*+<:
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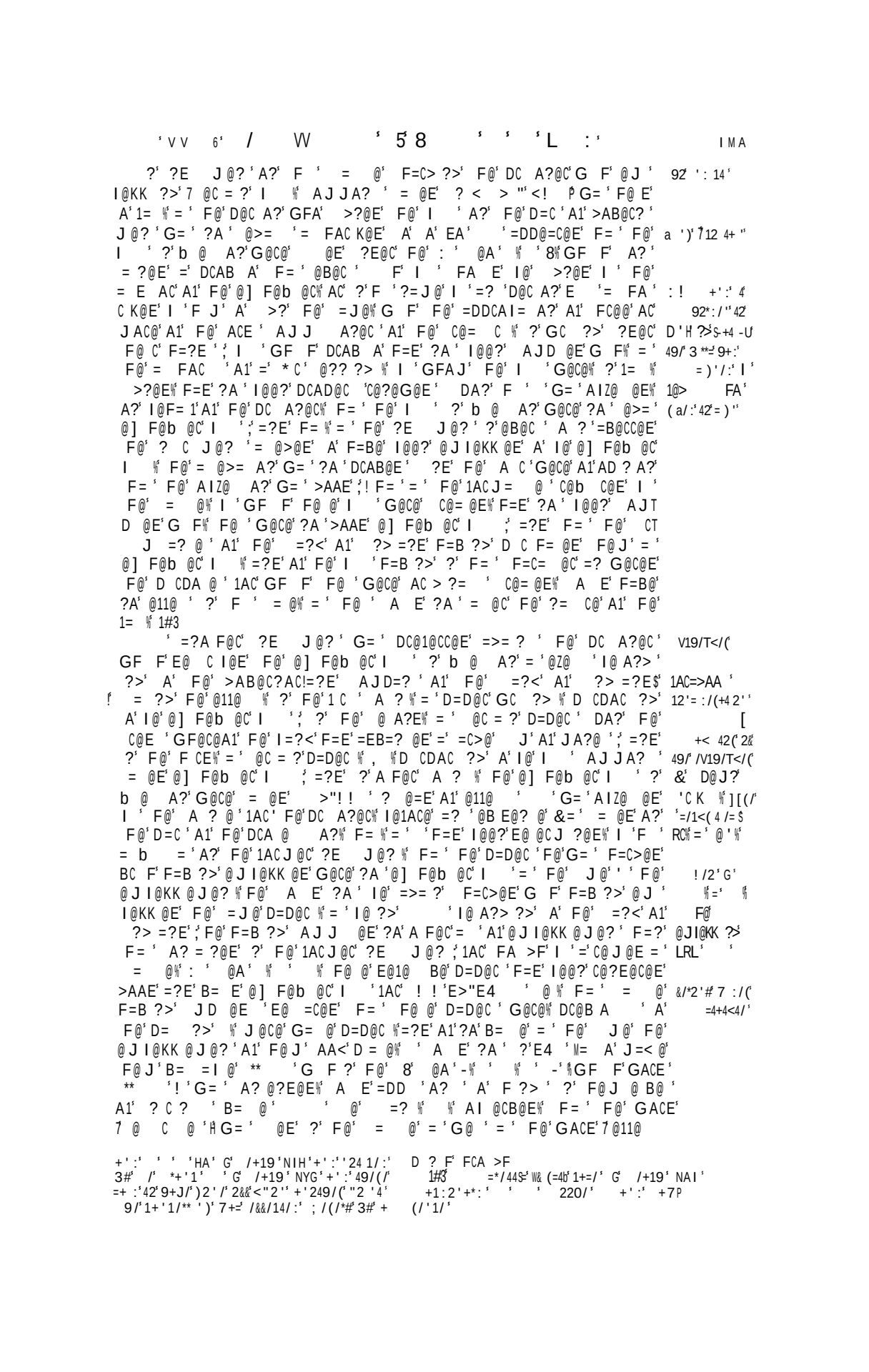

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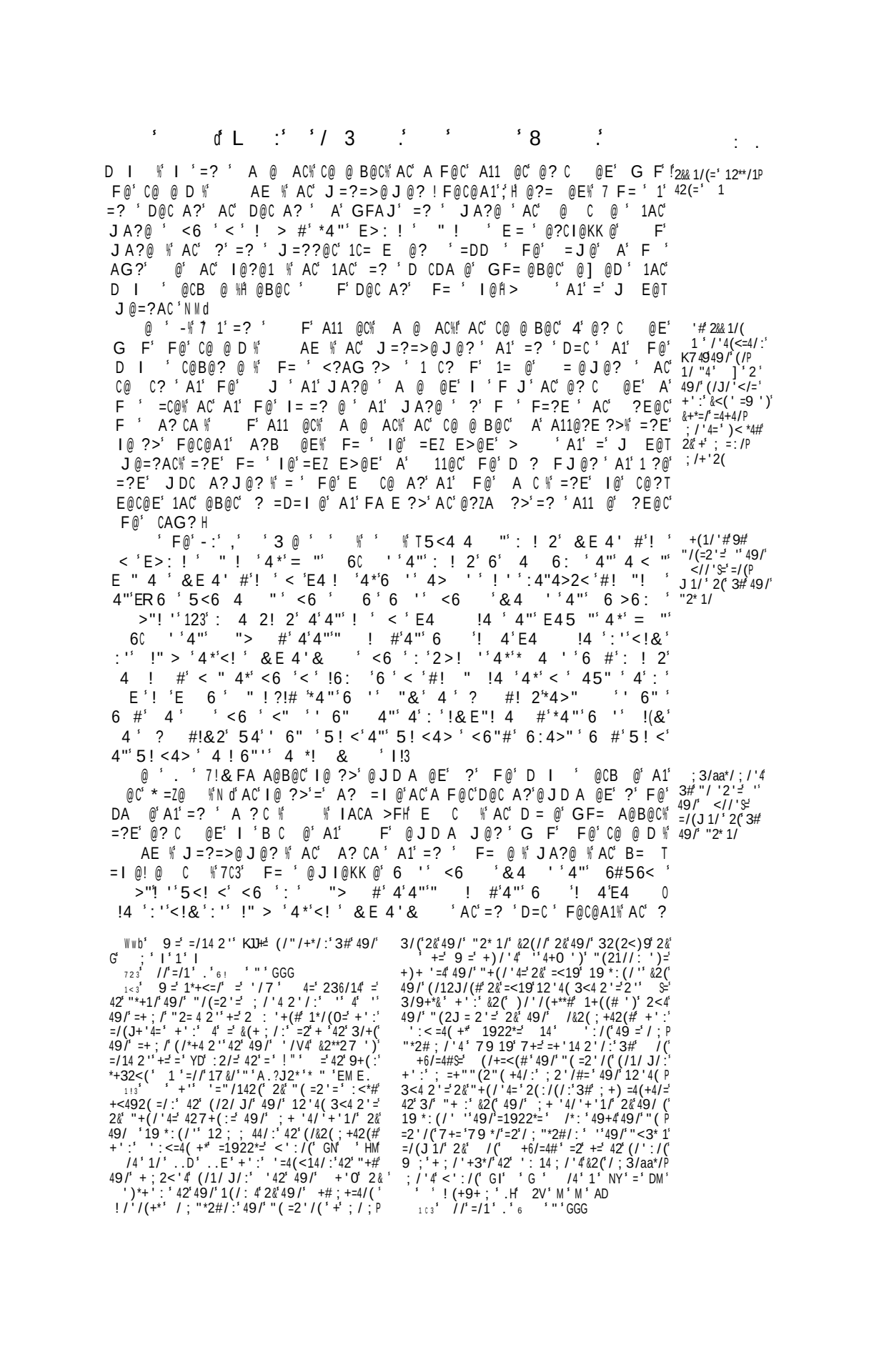

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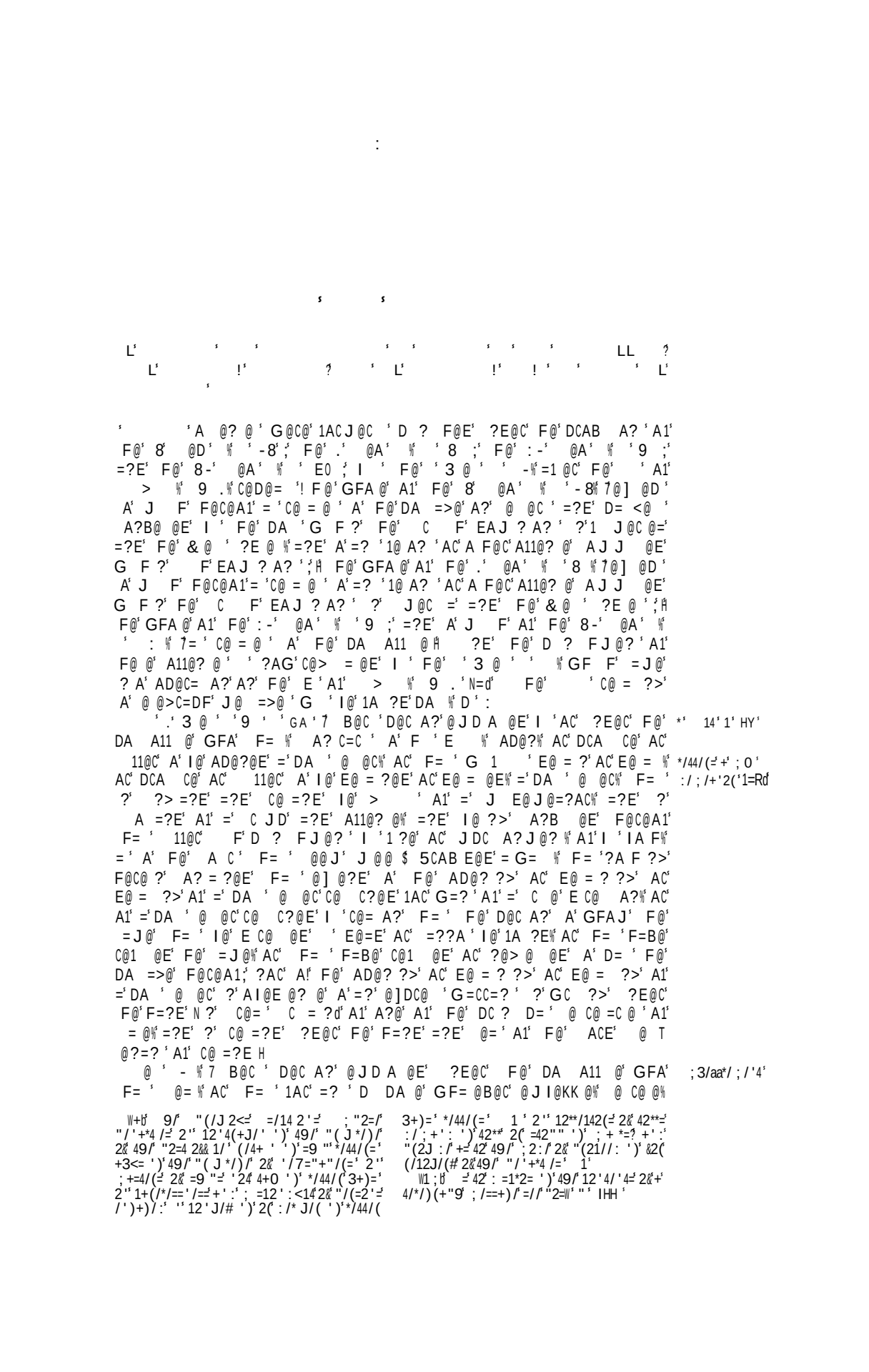

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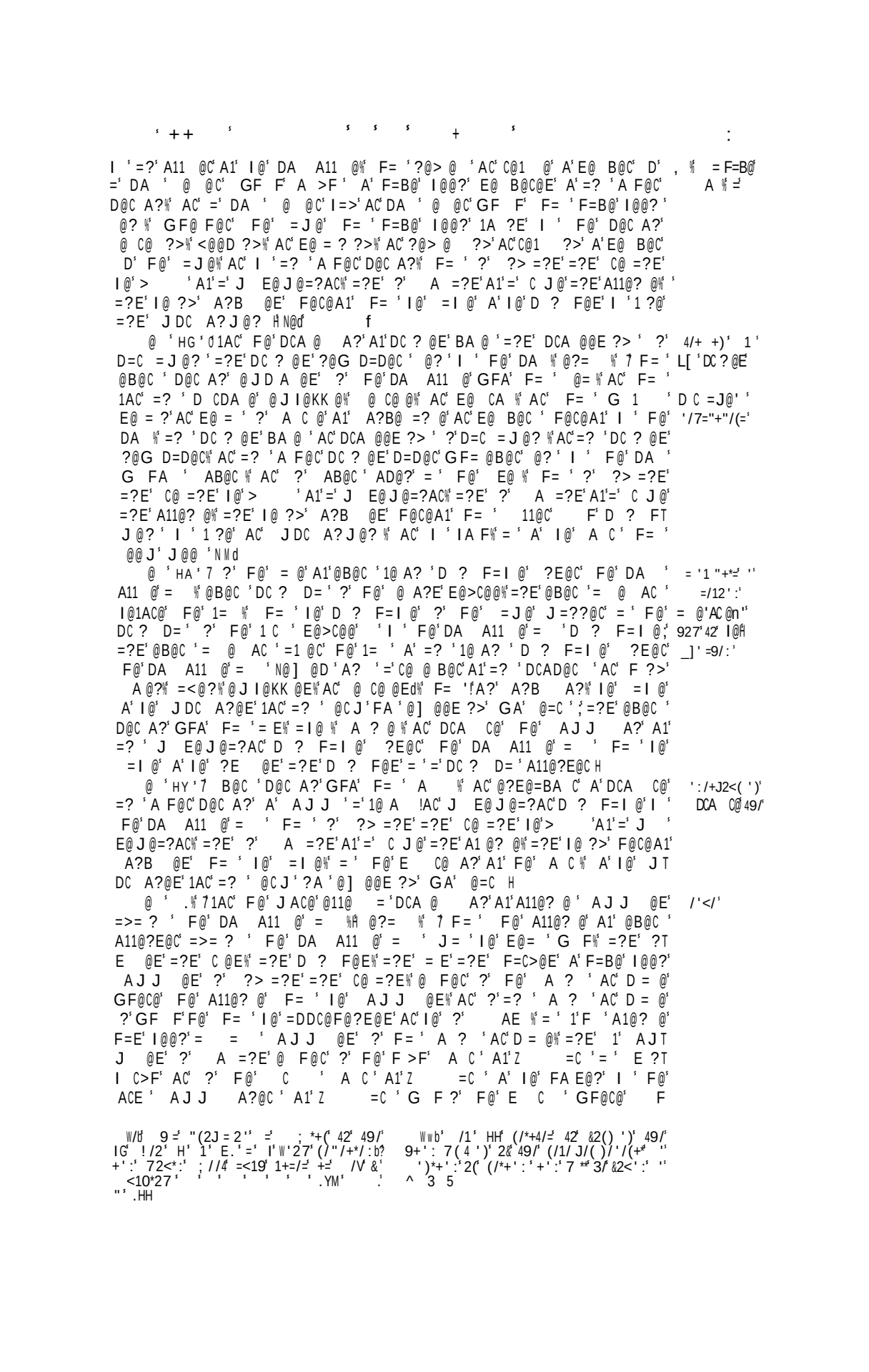
@ ' %' C@ ?>' F=' 7DA ' @ @C ' =C@' AJ @ J @ ' I ' J =<@' E@ B@C@E' A' F@' GCA?>' D@C A?%' =?E' DA ' @ @C ' =?E' DA ' @ @C' I=> ' =C@' A ' ?' F@' A C @' A1' A?B@ =? @' AC' E@ B@C ' F@C@A1%' =?E' =C@' E@ = ?@E' I ' F@' 1?E@C ' ?' @]D@ = A?' A1' >= ?' AC' C@G=CE%H @?= %' 7 F= ' @B@C ' D@C A?' GFA' F= '1C= E @? ' C@ = ?%' AC' F= ' G 1 ' @ C@ @' AC' <@@D' AC' E@ = ?%' AC' I@ ?>' C@b C@E' A' E@ B@C' D

W b / '+# =/(J 4<:/' &2(' +'# 4/(;' '24' /V1//: ')' =/J/'' +':' '24' */==' 49+'' 49(//' #/+(=' 2(' &' 49/' 2&&/'1/' 7+=' 12 ; ; 44/:' +&4/(' 49/' GA49'2&' <*#' .EYI' '24' */==' 49+'' & J/' #/+(=' =//' J2*' .' '' ^H

W1b / '+# =/(J 4<:/' &2(' * &/' 2(' &2(' +'# 4/(;' '24' */==' 49+'' 49(//' #/+(=' 2(' &' 49/' 2&&/'1/' 7+=' :;'6 44/:' +&4/(' 49/' GA49' 2&

<*#' .EYI' '24' */==' 49+'' & J/' #/+(=' =//' J2*' .' '' DH

" b / '+# =/(J 4<:/' &2(' +'# 4/(;' '24' /V1//: ')' &2<(4//'' +':' '24' */==' 49+'' 49 //' #/+(=' 2(' &' 49/' 2&&/'1/' 7+=' 12 ;P ; 44/:' +&4/(' 49/' GY49' 2&' <*#' .EYI' '24' */==' 49+'' & J/' #/+(=' =//' J2*' .' '' C?



: : 8 'D 5' '# W ' 5' $ % &' '

A11@? @' F= ' I@' A J J @E%' AC' ?' =? ' A ? ' AC' D = @' G F ?' GF F'
F' A11@?E@C' F= ' F@' =DDC@F@?E@E' AC' I@' ?' AE %' = ' 1' F '
A11@? @' F=E' I@@?' = = ' A J J @E' F@C@'; =?E' GF@C@' =?' A11@? @'
F=F' I@' A J J @E' ?' AC' DA? AC' ?' C@ D@ ' A1' =' J = %' AC' DA?' ='
D@C A?' @?>=>@E' ?' F@' A?B@ =? @' AC' E@ B@C ' A1' =' DA ' @ @C' I=>'
AC' DA ' @ @C%' AC' ?' C@ D@ ' A1' =' DA ' @ @C' I=>' AC' DA ' @ @C%' AC' ='
F= @ ' AC' J A?@ ' AC' 3= =I @' @ C ' @? ' I ' F@' DA %' F' A11@? @'
J = ' I@' E@= ' G F' =?E' ?b C@E' A1%' =?E' C @E' =?E' D ? F@E%' =?E'
= E' =?E' F=C>@E' A' F=B@' I@@?' A J J @E%' = 'G@ ' ?' =? ' A ? ' AC'
D = @' ?' GF F' F@' A11@?E@C' F= ' I@' =DDC@F@?E@E' AC' I@' ?' AE %'
= ' = A' ?' =? ' ? ' AC' D = @' FCA >F' =? ' D=C ' GF@C@A1' F@' J= %'
AC' F@' D@C A?%' AC' F@' DA ' @ @C' I=>' AC' FD' DA ' @ @C%' AC' F@'
F= @ %' AC' F@' J A?@ %' AC' F@' B= =I @' @ C ' @? ' I ' F@' DA %' ?'
C@ D@ ' A1' GF F' F@' A11@? @' F= ' F=B@' I@@?' A J J @E%' F= ' F=B@'
D= @E' ?' E @' A C @' A1' A?B@ =? @' AC' E@ B@ ' I ' F@' DA ' ?' F@'
=J @' J =??@C' = ' 1' ' F=E' I@@?' = = ' A J J @E' ?' F' A ? '
AC' D = @'; =?E' ?' = ' = @ ' GF@C@' F@' E@' AC' F@' @? C@' AC' A F@C'
D=C ' A1' =' F >FG= %' AC' F@' E@%' F@' I=?<%' F@' @? C@%' AC' A F@C'
D=C ' A1' =' C B@C%' AC' =?= ' AC'?=B >= A?%' F= ' A? @' F@' IA ?E=C !'
A1' GA' A ? @ %' F' A11@? @' J = ' I@' E@= ' G F' =?E' ?b C@E' A1%'
=?E' C @E' =?E' D ? F@E%' =?E' = E' =?E' F=C>@E' A' F=B@' I@@?' AJT
J @E' ?' @ F@C' A1' F@' = E' A ? @ ' FCA >F' GF F' AC' =EZA ? ?>'
A' GF F' AC' I ' F@' IA ?E=C ' A1'=? 'D=C ' A1' GF F' F@' J = 'AC' D@C A?'
F= ' F=B@' D= @E' ?' E @' A C @' A1' A?B@ =? @' AC' E@ B@C ' I ' F@'
DA %' ?' F@' =J @' J =??@C' = ' 1' ' F=E' = = ' I@@?' A J J @E' ?'

11/==2(/='
+ ' :' "/(=2'=' + . ')' + ' .'
12<'=/** ')'
 '' ; . =: /P
 ; /+'2(

F' ACJ ' AC' D = @'; =?E' @B@C ' = @ AC ' I@1AC@' AC' =1 @C' F@' 1= '
A' =? ' F' A11@? @%' 1' F@' = J @' I@' =' 1@ A? ' AC' =' F >F' C J @%' =?E'
@B@C ' D@C A?' = E ?>' AC' =I @ ?>' AC' A ? @ ?>' AC' DCA C ?>' F@'
A J J A?' A1' =? ' F' A11@? @%' 1' F@' = J @' I@' =' J E@ J @=?AC%'
J = ' I@' E@= ' G F%' ?E @E%' C @E%' =?E' D ? F@E' = ' 1' F@' G@C@' ='
DC ? D= %' =?E' F ' A11@? @' = E' =?E' F=C>@E' A' F=B@' I@@?' A J J @E'
?' =? ' A ? ' AC' D = @' ?' GF F' F@' DC ? D= ' A11@?E@C' J = ' F@'
C @E H "3B

: ' (+9# 6<(=: 14 2' '

@ ' %' 7 & F@C@' =?' A11@? @' D ? F=I @' ?E@C' F@' DA A11 @' = '
F= ' I@' A J J @E' G F ?' F@' Z C E A?' E1' F@' =E J C= %' F@'
=J @' F= ' I@' E@= ' G F' =?E' ?b C@E' A1'=?E' C @E' =?E' E@ @C J ?@E'
?' F@' =J @' J =??@C' = ' =? ' A F@C' A11@? @' A J J @E' G F ?' F= '
Z C E A? H N @@' BA ' %' D ' d

(2"'/(4#'=/ '4 3#' 49/' "2=4' 42' 3/' *+ .' ' 4*6/' "2=442+=4/ (')/ ' /4+

@ ' : %' 7 ?' @B@C ' = @' GF@C@' =?' A11@? @' F= ' I@' A J J @E' ?'
C@ D@ ' A1' =' DA ' @ @C' I=>' AC' =' DA ' @ @C%' AC' =' F= @ %' J A?@ %' AC'
='B= =I @' @ C %' @? ' I ' F@' DA %' ' F= ' I@' =G1 ' A' = ' ?' F@'
?E J @? ' AC' C J ?= ' @ @C ' A' I@' DC@1@CC@E' =>= ? ' F@' A11@?E@C'
F@' DCAD@C ' A1' F@' DA ' @ @C' I=>' AC' A1' F@' DA ' @ @C%' AC' F= @

R'BB' /1' HE' (/*+4/=' 42' 3+ *' '' 124*+ ' : ' 4' 7+=' &2(; /(*'# : /1 : /: ' 49+4' +'' ' : 14P ; / ' 4' &2(' (233 ')' +' ; + *' 3+)' 2& */44/(=' ; <=4' 3/' *+ :' '' 49/' 12<' 4'# 79/((/' 49/' */44/(=' 7/(/' +14<+**'# 4+0/ ' ' '' 2(: /(' 42' 3(')' 49/' 1+=/' 7 49 '' 49/' =4+4<4/' D' ! /2' H' 1' AM' =' G' ? +' :' 49+4' 4' 12<*:' ' 24' 3/' *+ :' '' 49/' 12<' 4'# 79/(/' 49/' "(=2' / (' 7+=' 2' '*# '' "2==/== 2'' 2& 49/ ; ' ? 49/' 6<(# 9+J ')' &2<' :' 49+4' 49/' */44/(=' 7/(/' 4+0/ '' &(2 ;' 49/' 3+) ' '' = ; /' 249/(' 12<' 4'# 49(2<)9' 79 19' 49/' : + *' 9+:' "+==/ : ' 92 ; +=$=' /+=/ ' G' /+19' YHI ' G' +=4' ' ' .Y' =' HN' "' YMA' 4' 7+=' +()</ :' '

49 =' 1+=/' 49+4' 49/(/' 7+=' +' ' /7' 4+0 ')' +' :' 2&&/ ' 1/' ' '' 49/' 12<' 4'# 79/((/' 49/' "(P =2' /(' 9+ :' "2==/== 2'' 2& 49/' */44/(=ñ 3<4' <"2 '' 49 =' 4' =' 23=/(J/ :' 49+4' 49/' =4+4<4/' D' ! /2' H' 1' AM' =' G' : :' ' 24' ; +0/' 49/' =4/+* ')' 2& */44/(=')/ ' /(+**'# +' 1+" 4+*' 2&&/ ' 1/' 3<4' 49/' =4/+* ')' 49/ ; ' &(2 ;' "*+1/=' "+(4 1<*+(*'# ="/1 & / :' ? 79 19' =' +' : /& ' 4/' +14' *21+*' '' 4=' '+4<(/ ' +' :' 1+' P ' 24' 3/' /V4/ ' : / : ' 9#' 12' =4(<14 2' ' 42' +' ' /7' 4+0 ')' '' /J/(#' 12<' 4'#' '42' 79 19' 49/' 49 ')' =42*/ ' '' =' 12' J/#/ : ' +=' '' 49/' 1+=/' 2&= ; "*/' *+(1/ ' #' G' +=4' ' ' 1' .Y' =' HN' "' YMY

AC J A?@ AC F@ B= =I @ @ C @? I F@ DA ?' F@ DA T
J = @C >@?@C= ;' I!3 =?E' F= ?A F@ ?@ @ =C ?' F@ ?E J @?
AC C J ?= @ @C A' = @>@' AC A' DCA3@' DA?' F@' C = AC A F@CG @'
F= F@' DA @ @C' F=>' AC =? F' DA @ @C' AC B= =I @' @ C
YG=' A1' =? B= @;' =?E' ?' =? ?E J @? ' A ?' =? C J ?= '
@ @C A' I@' DC@1@CC@E' =>= ? =? D@C A?' @ J D A @E' ?E@C' F@'
DA A11 @' 1AC' =? A11@? @' A J J @E' =>= ? F@' DA A11 @' =
F= I@' =G1 A' = @'=?E'= @>@' F= F' A11@?E@C' G= ' @ J T
D A @E' ?E@C' F@' DA A11 @' A F@' ? @E' < ?>EA J' = F@' J @' A1'
F@' A J J ?>' A1' F' A11@? @ G FA = ?>' 1 C F@C' F@' ?= C@'
AC' D=C =C A1' F @CFD A J @? H

@ : 7 B@C fD@C A?' A?B @E' A1' =? A11@? @' 1AC' GF F' F@' <' =9 ; /'4=
D ? F J @? A1' C=? DAC = A?' 1AC' 1@' F@C@ ?' =G=CE@E F= F@'
=I @' A' I@' C=? DAC @E' I@ A?E' F@' @= 1AC' 1@' AC'1AC' =? @C J'
?A @ F=?' @B@?' @=C AC' A' I@' J DC A?@E' 1AC' =? @C J' ?A'
@] @@E ?>' 1A C' @=C ;' q ?E' @B@C D@C A?' A?B @E' A1' =? A11@? @'
D ? F=I @' = ACE ?>' A' F@' DA A11 @' = I C=? DAC = A?' 1AC'
1A C @@?' @=C F= I@' =I @' A' I@' C=? DAC @E' N'd 1AC' =? @C J'
?A @] @@E ?>' 1A C @@?' @=C ?AC' @ F=?' @B@?' @=C AC' A' I@' J T
DC A?@E' 1AC' =? @C J' ?A @] @@E ?>' FC@@' @=C H

@ :-7 & F@C@' =' D@C A?' F= I@' A?B @E' A1' =?' A11@? @' 27/(' 4Z'
D ? F=I @' ?E@C' F@' DA A11 @' = 1AC' GF F' =DC A? =@? J = +7+(:' 9+(:'
I@' =3=CE@E F@' A C' J = @? @? @' F@' A11@?E@C' A' I@' J DC A?@E *+47<(' 2(' =2* P
G F' AC' G FA F=CE' =I A C ?' F@' A J J A?' >=A AC' FA @' A1' ACT 4+(# 12'& '/P
C@ A? =?E' J = =' A' E C@ F= F@' F= I@'<@D ?' A =C A?1 ?@T ; /'4
J @? N d 1AC' F@' GFA @' AC' =? DAC A?' A1' F' J DC A? J @? = ' A'
F@' A C' F= @@ J' J@%@ H Nqd

@ : .7 1AC' F@' ? @CDC@ = A?' A1' F@' DA A11 @' =G %H @?= '4/("(/4+4 2''
7 F= F@' 1A AG ?>' @C J =?E' @]DC@ A? F= F=B@' F@' @B@C= Y &
? @CDC@ = A? F@C@ ? =1 @C' C@ D@ B@ @ 1AC F ? @ ^
? @CDC@ = A? =C@' C@D >?=?' A' F@' IZ@ AC' ? A? @?' G F'
F@' A? @] A1' F@' DCAB A?' ?' GF F' F@ J = I@' 1A ?E' ; N F= '
A' = d F@' @C J' "! <' "' F= J @=?' =' @ @C' C=? J @E'
G F ?' F@' ? @E' < ?>EA J' ;' =?E' Fu' @C J' "! ! <' 5 E6E " ' F= '
J @=?' ?@G D=D@C ' DC ? @E' =?E' D I F@E' ?' F@' ? @E' < ?>EA J
=I @' A' F@' =J D' E =?E' E =J D@E' ;' =?E' F@' @C J' "! ! <'
E4 62 ' F= J @=?' F@' E F=C>@=I @' A?' @ @C ' C=? J @E' I '
DA 1CA J' D = @' A' D = @' G F ?' F@' ? @E' < ?>EA J AC' 1' C=? T
J @E' A' AC' 1CA J' F@' ? @E' < ?>EA J F=C>@=I @' 1AC' F@' E =? @'
GF F' F@ ' F= ' I@' C=? J @E' G F ?' F@' ? @E' < ?>EA J =?E'
? E ?>' = A' F@' D= <@ ' DA =>@ 1' =? ';' =?E' F@' @C J' J 4 4 !6 '
"' F= ' J @=?' =' @ @C' C=? J @E' I @ G@@?' =? A1' @C' * =Z@ H'
A A? @ ' =?E' F@' ? @E' < ?>EA J' ;' =?E' F@' @C J' J 4 4 !6 ' 5

" Z /' +*=2' 49/' H ' I'U /4' 1' NY' =' YY' &*' / ; /' 4' &2(' +' #' *2 ') /(' "/(2 :' 49+ '' 2' /'
49+4' 4' =' =<4 1 /' 4' 42' : /=1(3/' 49/' "2=4 ; +=4/(' ; 2' 49' +4' +' 4 ; /' 2(' 49+ '' 49(//' ; 2' 49=
)/' /(+*' +=' 0 /(' +6/=4#$=' 2=4 ; +=4/(' '' 49/' =" +1/' 2&' +' #/+(' $
! /' /(+*' $K7 492<4' +' #' 249/(' ' + ; /' + : ' : P 2 B /1' IH) J/=' +' "27/(' 2&' : =4(/=' &2(' 49/' (/12J/(#' 2&' =< ; =' : </' &2(' "2=4+)/'
4 2' ' 2(' : /=1("4 2' '2' 4' /V1/ / : ') ' GMD ' '' 49/' <' 4/ : ' O ') : 2 ; '
W b' 27' " / ' +* =/(J 4< : /' &2(' '24' */=' 2(' /*=/ 79/(/' '' /(' +6/=4#$' : 2 ; ' 2' =' 49+ '' 49(//' #/+(=' 2(' &' 49/' 2&&/ ' 1/' K7+' /1' I I' "(2J : /=' '' 79+4' 7+#' : <4 /=' &2(' 12 ; ; 44/ : ' +&4/(' 49/' GA49' 2&' <*#' .EYI ' "2=4+)/' ; +#' 3/' =</ : ' &2(' /1' IA') J/=' '24' */=' 49+ '' & J/' #/+(=' //' J2*' . ' 49/' &2(; =' 2&' 12 ' J 14 2 ' ' 1' /1' IY' "' DH (/) <*+4/=' 49/' ; 2 : /' 2&' "(21// : ')' '' 1C3' #' 49/' . ' /4' 1' NM' =' A' 0 4' =9+*#' +14 2 ' =
'24' 3/' *+7&<*' &2(' +' #' 2<(4' 42' : (/14' 49+4' R : : B J ' 42' 4/*/) (+" G 14=' 3/ ')' 7 49 '' +' #' 2&&/ ' : /(' =* +*#' 3/' O/" 4' '' =2* 4+(# 12' 49 =' 14' =/' . " ' IEI

E6E " ' F= ' J @= %' ?@G D=D@C ' DC ? @E' =?E' D I F@E' ?' =? '
A1' @C' * =Z@ H' EA J ? A? ' A ' A1' F@' ? @E' < ?>EA J ;' =?E'
F@' @C ' 4 !4 'E4 ' F= ' J @=?' DA ' @ =I F@E' I ' F@'
DA J = @C >@?@C= ' ?E@C' =>C@@ J @? 'G F' F@' ?F=I =? 'A1' =? '
D = @ ';' =?E' F@' @C J ' #4>: ' "' F= ' J @=?' =' @ @C' F=B ?>' A?@'
? A C@;' =?E' F@' @C J ' #4>: 'E4 62 ' F= ' J @=?' G @' F@'
= J A ? ' A1' ?> @' DA =>@';' =?E' F@' @C J ' U6 ' #! ' F= ' J @=?'
@B@C 'DAC ' =?E' D = @' G F ?' F@' @CC AC = ' = b A? ' ?AG' B@ @E'
?' F@' = ' ?E =' A J D=? ' ?' C 'MAC' @C' * =Z@ %' =?E' @B@C '
A F@C%' DAC ' AC' D = @' G F ?' F@' J ' A1' F@' F=C @C' A1' F@' = E'
A J D=? 'N F ?='@] @D @Ed%' =?E' F= ' = A' ? E@' F@' =D@' A1' AAE'
AD@'Z' =?E' F@' @C J ' ?E" ' F= ' J @=?' @B@C ' ?E' 4*' A?B@ =? @'
@J D A @E' A' =CC ' @ @C ' A?' I@F= 1' A1' F@' DA A11 @' A F@C' F=?'
F@' = ' J = ;' =?E' F@' @C J ' *4" !2 ' 4> "' ' F= ' J @=?' =? '
A ? C %' = @%' AC' < ?>EA J ' ?A ' ? E@E' ?' F@' EA J ? A? ' A1' @C'
Z * =Z@ ;' =?E' F@' @C J ' *4" !2 ' "' F= ' J @=?' =' @ @C' C=? T
J @E' A' AC' 1CA J ' =' 1AC@ >?' A ? C ;' =?E' F@' @C J ' *4" !2 ' ! '
E6E " ' F= ' J @=?' ?@G D=D@C ' DC ? @E' =?E' D I F@E' ?' =' 1AC@ >?'
A ? C ' ?' F@' =?> =>@' A1' F= ' A ? C ';' =?E' F@' @C J ' *4" !2 '
E4 62 ' F= ' J @=?' F@ E ' F=C>@E' 1AC' F@' A?B@ =? @' A1' @ @C '
G F ?' F' 1AC@ >?' A ? C ;' =?E' F@' @C J '*" & ! 2' 4**! "' F= '
J @=?' F@' D@C A?' =DDA ? @E' A' 1C=?<' F@' A11 =' ACC@ DA?E@? @' A1'
A11 @ ' A' GF F' F@' DC B @>@' A1' 1C=?< ?>' ' >C=? @E;' =?E' F@'
@C J ' = "' 6C '' F= ' J @=?' = "' 6C ' '< "' < !" '6 #' > 0
4" 'G' =?E' F@' @C J ' = "' 6C 'P ' 4 4 ! ' F= ' ? E@' @B@C '
DAC ' =?E' D = @' G F ?' F@' @CC AC = ' = b A? ' ?AG' B@ @E' ?'
F@' = ' ?E =' A J D=? ' ?' C '1AC' @Z;' * =Z@ %' F@' =D@' A1'
AAE' AD@%' F@' =?E ' A1' = ? ' @ @?=%' @C? @ %' @C @ %' =?E'
@' A1' * =?' N ? @ ' =? ' F' D = @ ' I@' @] DC@ ' @] @D @E%d' = '
G@ ' = ' @C' * =Z@ H 'A F@C' A A? @ ' =?E' DA @ A? ' I@ A?E' @= ';'
=?E' F@' @C J '! 6 #'E4 62 ' F= ' J @=?' F@' E ' F=C>@E' 1AC' F@'
C=? J A?' A1' DA ' @ @C ' G F ?' F@' J ' A1' F@' ? @E' < ?>EA J '
AC' G F ?' F@' J ' A1' =? ' A A? ;' =?E' F@' @C J ' "' F= '
? E@' D= <@ %' =?E' F@' @C J ' E6 ' F= ' ? E@' @ @C;' 1 3' =?E'
F@' @] DC@ A?' `4"#' `! > 6 '4*' " 6 #' F= ' J @=?' F@' F @1'
>AB@C?AC%' AC' >AB@C?AC ' A1' C@ =?E' 1AC' F@%' J @' I@ ?>;' =?E' Z F@'
@] DC@ A?' 4"# '4*' < ' " 6 >"'' F= ' J @=?' F@' ACE' F >F' @= C@C'
A1' F@' ? @E' < ?>EA J ' A1' C@= ' C = ?' =?E' C@ =?E%'

J AC@' F=?' GA' F@@ ' AC' D @ @ ' A1' D=D@C% GF= @B@C' F@' ? J I@C' ?E@C' F@' G@ >F ' A1' =?' A ? @';' =?E' F@' @C J ' " : ' E4 !2 ' F= ' J @=?' FC@@' J @ ' F@' =J A ? ' A1' ?> @' DA =>@';' =?E' F@' @CJ' " : ' < ' #> ''4*'E4 62 ' F= ' J @=?' FC@@' J @ ' F@' =JA ?' A1' F@' DA =>@' A'GF F' F@' @ @C' A' I@' F=C>@E' GA E' A F@CG @'F=B@' I@@?' =I @' = ACE ?>' A' F@'C= @ 'A1'DA =>@' F=C>@=I @' A?' @ @C ';' =?E' F@' @CJ'> ! #' ! 2#4&' F= ' J @=?' F@' ? @E' < ?>EAJ' A1' C@= ' C = ?' =?E' C@ =?E';' =?E' F@' @CJ' 6 >6: ' >"! '' F= ' ? E@' F@' GFA @' AC' =? 'D=C 'A1' =? ' = % ACE@C% AC' A F@C' @ C ' GF= A@B@C% @? ?>' AC' @B E@? ?>' F@' @' A1' =? 'D@C A?' AC' IAE 'Ú ACDAC= @' A' =? ' F=C@' AC' ? @C@ ' ?' =? ' D I ' A <' AC' 1 ?E% GF@ F@C' A1' F ' < ?>EAJ' AC' A1' C@= ' C = ?' AC' A1' C@ =?E% AC' A1' =? 'IAC@ >?' = @% AC' ?' =? '1 ?E' A1' =? 'IAE ' ACDAC= @% AJD=? % AC' A @ % AC' A' =? 'E@DA ' ?' =? ' =B ?> ĦI=?<% AC' F@' GFA @' AC' =? 'D=C 'A1' =? 'E@I@? C@% E@@E% IA?E% I % ?A @% G=CC=? % AC' ACE@C% AC' A F@C' @ C 'GF= A@B@C' 1AC' JA?@ 'AC' 1AC' D= J@?' A1' JA?@ % GF@ F@C' A1' F ' < ?>EAJ' AC' A1' =? '1AC@ >?' = @% AC' A1' =? 'G=CC=?' AC' ACE@C' 1AC' F@'E@ B@C 'AC' C=? 1@C' A1' =? '>AAE 'AC' B= =I @' F ?>';' =?E' F@' @CJ' ' F= ' ? E@' =? ' F D' AC' A F@C' B@ @' ?A ' =' DA A11 @' D= <@ ;' =?E' GF@?@B@C' F@' @CJ' : 5 ' ! ' @E' ?' C@1@C@? @' A' F@' C=? J A?' A1' @ @C % ?@G D=D@C % D=C =J@? =C ' DCA @@E ?> % AC' A F@C' F ?> ' I@ G@@?' A?@' D = @' =?E' =?A F@C% ' F= ' =DD '@b = ' A' F@' C=? J A?' 1CAJ' @ F@C' D = @' A' F@' A F@C';' =?E' @B@C 'A11 @C' J@? A?@E' F= ' J@=?' F@' D@C A?' 1AC' F@' J @' I@ ?>' @]@ ?>' F@'1 ? A? 'A1' F= ' A11 @C';' =?E' GF@?@B@C' ?' F ' 'AC' F@' F@E @ ' F@C@ A% G F' C@1@C@? @' A' =? ' D@C A?' 4"' J = @C' AC' F ?>% AC' A' =? ' D@C A? % J = @C % AC' F ?> % F@' ?> =C' AC' D C= ' ? J I@C' AC' F@' J = ?@' >@?E@C' A? ' ' @]DC@ @E% F' @]DC@ A?' F= ' I@' ?E@C AAE' A' ? E@' @B@C=' D@C A? ' AC' J = @C ' AC' F ?> ' = 'G@ ' = 'A?@' D@C A?' AC' J = @C' AC' F ?>% =?E' A?@' D@C A?% J = @C% AC' F ?>' = 'G@ ' = ' @B@C=' D@C A? ' AC' J = @C ' AC' F ?> % 1@J = @ ' = 'G@ ' = ' J = @ % IAE @ ' DA ' AC' ACDAC= @' = ' G@ ' = ' ?E B E = % ? @ ' ' I@' A F@CG @' D@ = ' DCAB E@E% AC' F@' IZ@ ' AC A? @] ' I@' C@D >?=? ' A' F' A?T C A? H

9/(/' "(2 ' J = 2 ' = 2& 14' =9+-*' /V4/ ' :' 42

' @ ' :9% F@' ' @] @?E ' A' !' F@' =?E ' A1' * =?% @C @ % @C? @ % =C<% =?E' E@C?@ % =?E' ?' = ' @C' * =Z@ H' A A? @ ' =?E' EAJ ? A? 'GF@C@' =? 'DA 'AC'DA ' AJ J ? = A?' '@ =I F@E' I ' AC' ?E@C' F@' DA J = @C >@?@C=' A1' F@' ? @E' < ?>EAJ' A1' C@= ' C = ?' =?E' C@ =?E H

9/' AG' ! /2' H' 1' . IH' (/*+4/ :' 42' 49/' / ; P 3/aa* ')' 1 ' 2& +' #" +(4' 2& +' 3+ 'O ' 24/ ' 1

F@' 8-' @A ' % ' : ' N?AG' C@D@= @Ed' C@ = @E' @] DC@ ' A' F@' @J I@KK ?>' =?E' @= ?>' F@' GFA @' AC' 6 ' 'E6" ' A1' =' I =?<' ?A @% , ' F@' 1AC J @C' = @% .' @A ' 9% ' 8 % G= ' ?A ' @b = ' @] @? B@';' I ' 'G= ' FA E@?' F= ' =' @ @C' =CC @C' @ C@ ?>' F= 1' =' I =?<' ?A @' ?' A?@' @ @C' A?' A?@' E= % =?E' F@' A F@C' F= 1' ?' =?A F@C' @ @C' A?' =?A F@C' E= % G= ' >b ' A1' =' @ !@ ?>' G F ?' F= ' = @% NJd ?E' F@' : -' @A ' % ' 9 % ' -% @] @?E@E' F@' DCAB A? ' A1' F@' .' @A ' % ' 8 % A' F@' DCA @ A?' A1' 6 ' 'E6" ' A1' F@' @ C @ ' AC' ? C J @? ' F@C@ ?' J @? A?@E% 1 3

2 ' =4(<14 2 '' 2& 49/' D' ! /2' H' 1' AM

AJ @' A1' F@' = @ ' E@ E@E' DA?' F@' .' @A ' % ' 8 % =?E' 8 -' @A ' % ' : % J = ' I@' @1 ' ?' F@' A? C A?' A1' F@' J =C' DCAB A? ' A1' F@' ?@G' = @

' /V □ ' 22(/' G' /+19' ' G' ' /' 49/' '4/("(/4+4 2 '' 1*+<=/' +=4' ' ' 1' .Y' =' GG' "' AEG' "' GGG

'GF@C@' =' DA J C@ ' @JDA @E' F@' DC J @C' '=' ==C 'A1'
: ' = G@@<' A' =CC ' F@' @ @C' I=>' 1CAJ' # C @ A' @C<@ @ ' =?E'
F@' G= ' = AG@E' I ' F@' DA A11 @' ?' F@C' b =C @C '= A ? ' F@'
J ' F@' D= E' F J ';' I ' F@' DC A?@C' ?@B@C' AC @E' F@' @ @C ' AC'
AD@?@E' =? ' J = ' I=>';' 'G= ' F@ E' F= ' F@' G= ' =' D@C A?' ?' F@'
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"*2#/ :' 3#' +'
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"/(&2(;' 4=' F@' DA @E' = '=?' = =? ' ?' F ' I ?@ ' =?E' C@ @ B@E'
:<4 /=' =' +' F@' D=D@C' >@ ' F@' D=D@C' 1 @E' D' =?E' =<@' =?' A= F' 1= F1 ' A'
"/(=2 '' / ; P D@C1AC J' F@' E @ ';' =?E' F@' DC A?@CH' J = @C' GF@?' F@' @? @C@E' F '
"*2#/ :' <'' : /(' @JDA ' >=B@' F J' F' =' D=D@C' @ ?>' F J' A' >A' I@1AC@' =' J => T
49/' "2=4 I& 1/ C= @' =?E' =<@' F@' A= F';' F@' DC A?@C' G@? ' =G= ' =?E' A?' F '
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=?E' FAG@E' F@' D=D@C' DCAD@C ' 1 @E' D' C@ G@ ' ' F@ E' F= '
F 'G= ' 11 @?' @B E@? @' A1' F ' I@ ?>' @JDA @E' ?E@C' F@' DA '
A11 @' N/d' A' GF@C@' F@' DC A?@C' GFA' G= ' ?E @E' 1AC' =' J =C'
A11@? @' G= ' ?' F@' @CB @' A1' =' E C 'DA J = @C' =?E' A = A?= '
= @E' ?' J =< ?>' D' F@' @ @C' I=> ' I 'G FA ' I@ ?>' D@ = '
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I ' 'G= ' AB@E' F= 'F@' I =E' =<@?' Fp' =JU' A= F' = ' F@' DC A?@C'
F=E' ?' F@' DC@ @E ?>' = @;' = @ A?' ' F@ E' F= ' 'G= 'b @' 11 T
@? ' = ' ' ICA >F ' F@' = @' G F ?' F@' DC@ @E ?>' = @' 1>3

'"/(=2'" / ; P DA?' =?' ?E J @?' = @> ?>' F= ' F@' DC A?@C' I@ ?>' @JDA @E'
"*2#/ :' 42' ?E@C' F@' DA A11 @' A @' =' @ @C' A? = ? ?>' ?=A?@ ' ' =DD@= @E'
1+&&#' */44/(=' F= ' F@' DC A?@C' F=E' 1AC' AJ@' J@' I@@?' @JDA @E' ?E@C' F@' DA '
&(2 ;' 2' /' A11 @' A' =CC ' @ @C ' 1CAJ' GJ' BA?' A' = I= I ' F@' @ @C '
"'+1/' 42' G@C@' E@ B@C@E' ?' =' @= @E' I=>' GF F' 'G= ' F ' E ' A' E@ B@C' = '
+' 249/(' 7+=' F@' D@C1AC J =? @' A1' F@' E ' A1' F ' @JDA J @?' ' &=' AJD @ @'
+=0/ :' 3#49/' ?@' E= ' F@' DC A?@C' ICA >F ' F@' I=>' =1@ ' =?E' E@ B@C@E' ' A'
"2=4 ; +=4/(' 42' F@' DA J = @C' GFA @' E ' 'G=' A' AC' F@' @ @C ' ?' J @' A'
+== =4' '' =2(4P J =<@' ' F@' DA @E' =?E' A?' F@' E @' I=>' =1@ ' =?E' E@ B@C@E' ' A'
')' 49/'*/44/(=' ?@' E= ' F@' DC A?@C' ICA >F ' F@' I=>' =1@ ' =?E' E@ B@C@E' ' A'
+' :' : :' =2' F@' DA J = @C' GFA @' E ' 'G=' A' AC' F@' @ @C ' ?' J @' A'
+' :' 79 *=4' =2' J =<@' D' F@' F=> ' 1AC' F@' J = ' D= ?>' FCA >F' F@' AG?' F@'
:2 ')' =42*/' +' DC A?@C' I@ ?>' C@b @ @E' I ' F@' DA J = @C' A' = ' ?' F@' AC T
*/44/(' +' :' 4' ?>' A? @? @E' A' EA' A' =?E' GF ' DCA @@E ?>' ?' F@' = AC J@? '
7+=' 9/*:' 49+4' A @' F@' @ @C' ?' b @ A?' ' 'G= ' A? @?E@E' F= ' = ' F@' AC ?>'
9/' 7+=' +4' 49+4' 1AC J @E' ?A' D=C ' A1' F@' DC A?@CH ' E ' I ' G= ' C@?E@C@E' J @C@ '
4 ; /' / ; "*2#/ :' 1AC' F@' D@C A?= ' = D = J AE= A?' A1' F@' DA J = @C' F@' = @' G= '
<' : /(' 49/' "2=4 2&& // ?A ' G F ?' F@' = @';' I ' }DA?' =' = @' C@ @CB@E' =1 @C' =' B@CE '
A1'> ' &=' F@ E' F= ' F@' DC A?@C' =J@' G F ?' F@ @ J '7@J

W=b' /V' ' +* =3<(#' A' ' ' .YA' /J : / '1/' 2&' / ; "*2# ; / '4' 3#' 49/' "2=4 2&& 1/'
+44/=2 ' ' /' /)' J' 27 '=/ ' : ' 1+'' 9/') J/ ' 'S
' ' ' .DE' .' "' ! " B' /)' ' : "+"' ' I' 2V' ' 'GDA'
.. 8' /)' . *' /(' I' 2V' ' M ' GDA' '4 *' 49/' 2+49' 7+=' "(2J/ :' '' 49 =' 1+=/'
/&2(/' 49/' /J : / '1/' 2&' 49/' 2+49' +<:' 49/' +44/=2 ' ' / '4/(4+ ' / :' = ; 9+(' :2<34='
6 "/(' 7+=') J/ ' ' 9'==7/**' ' =+ : ' 42' (/==7/**' ' ' 49/' "(/1/ : ')' 1+=/'
0' 9/' =2(4 ')' 2&*/44/(=' 1/(4+ '*# : 2/=' '24' +' :' =+ : ' 0 ' + ;' ' 24' +7+(/' 2&+' # 1+=/' ''
+""/+(' 42' 12 ; /' 7 49 '' 49/' */) 4 ; +4/' 79 19' 4' 9+=' 3// '' 9/*:' 4* +4' +' "/(=2'' ''
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B' "2=4 ; = (/=' (/1/ J/ :' +' */44/(' < ' P =/+*/ : ' +' :')+J/' 4' ' ']' =/+*/ :' 7 49' ; 2 ' /# 42' 9<# 9' "2=4 2&& 1/ ' 2(: /(' 42' +' */44/(' 1+((/(' +' :' : (/14/ :' 9 ;' 42' 3<# 49/' 2(: /(' +# 49/' 2&& 1/' 42' 79 19' 9/' 1+((/ :' 49/' */44/(= ' +' :' ' 1*2=/' 4' '' 49/' */44/(' 9<4' 9/' ' /J/(' : /P * J/ (/ :' 49/' */44/(' +' :' 0/"4' 49/' ; 2 ' /# ? 9/*:' 49+4' 9/' 7+=')< *4# 2&' *+4 ' 1/ ' # 2& +' "2=4 */44/(

F@' DC A?@C' G= ' F=C>@E' ?' E 11@C@? ' A ? ' G F' @= ?>%' @ J I@KK ?>%' =?E' E@ CA ?>' =' DA ' @ @C%' F@' I@ ?> = ' F@' J @' @ J D A @E' ?E@C' F@' DA A11 @' F@' DC A?@C' G= ' F@' DA ' J @ ' @?>@C' I@ G@@?' = >AG' # A <' =?E' =? = @C ' F@' DA J C@ ' = ' F@' A11 @' = ' = >AG' # A <' C@ @ B@E' F@' @ @C' ?%' b @ A?%' =EEC@ @E' A' 7 * =C ' F=?E @ %' -:' " AC F C@@ %' B@CDAA %H AT >@ F@C' G F' '1AC' =' DA A11 @' ACE@C' A' F= ' =J A ? %' E ' 1AC' F@' DA ?E=>@' A?' F' ACE@C%' * ' 1AC' F@' DA =>@%' =?E' E ' 1AC' F@' J @ @?>@C' 1CA J' F= ' A11 @' A' F@' A?@' ?' =? = @C%' I ' G= ' A1' A J J A?' AC' >C= '1AC' F ' CA I @' ?' >@ ?>' F@' ACE@C ' F@' @ @C' GF@?' C@ @ B@E' G= ' ? @= @E%' =?E' F@' DA J C@ ' ?' E @' A C @' E@ B@C@E' %' ? @= @E%' =?E' G F' F@' JA?@ %' A' F@' DC A?@C%' ? C ?>' F J ' A!' A I = ?' F@' ACE@C' 1AC' F@' ' = ' F@' =? = @C' A11 @%' =?E' F@?%' =1 @C' ? A ?>' F@' ACE@C' ?' %' A' DA ' F@' @ @C' = ' F= ' D = @' F@' DA J C@ ' = ' F@' =? = @C' A11 @' = @E' F= ' F@' DC A?@C' F=E' ?@B@C' E@ B@C@E' F@' @ @C%' =?E' F=E' D= E' ?A' J ?@ ' = ' F@C' A11 @' 1AC' F@' DA A11 @' ACE@C%' ?AC' A?' = A ? ' A1' =? ' F' ACE@C ' ' DAC A?' A1' F@' =J @' @ @C' G= %' A?' F@' DC A?@CH ' =DDC@F@? A?%' 1A ?E' ?' F ' IA] ' ' G= ' IT J @E' F= ' F@' DC A?@C' A E' ?A ' I@' A? E@C@E' = ' @ J D A @E' ?E@C' F@' DA A11 @' ?' F ' ? =? @%' =?E' F= ' F@' @ @C' G= ' ?A ' =' DA ' @ @C%' = ' ' G= ' E@ B@C@E' A' F J' ?' ACE@C' F= ' F@' J >F ' D@CT 1AC J' =?' = ' A1' =>@? ' G F' C@ D@ ' A' ' I@1AC@' ' FA E' I@ ' = = 'DA @E' = ' =? = @C ' ' C@ G@ %' %' G= ' A1' AD ? A?' F= ' ?E@C' F@ @' C J =? @ ' F@' @ @C' J !' I@' A? E@C@E' =' DA ' @ @C%' =?E' F@' DC A?@C' ?' F@' @ J D A ' A1' F@' DA A11 @%' 1#3 ' G= ' E@ E@E' A?' F@' .' @A' %' ' 8 %' F= ' = ' I ' A1' @] F=?>@' J >F ' I@' = E' ?' F@' ?E J @? ' = =' G=CC=? ' 1AC' F@' D= J @? ' A1' J A?@ ' F@' DC A?@C%' =' @C<' @ J D A @E' ?' F@' DA A11 @' = ' C J ?>F= J %' G= ' F=C>@E' ?' F@' ?E J @? ' G F' @= ?>' 1CA J' =' @ @C' =' @C = ?' 5 6 "" 6 '*4 "' < ' E6 ' & ' 4 *' & 4 ' G' =?E' ' G= ' A I Z@ @E' A?' F ' I@F= 1' F= ' F@' ? C J @? ' ?' b @ A?' G= ' ?A ' = ACE ?>' A' F@' C @' A? C A?' @ 1' F@' = @%' =' G=CC=? ' 1AC' F@' D= J @? ' A1' J A?@ %' I ' =' DA ' I %' ?A @%' AC' F ' A1' @] F=?>@%' N@d F@' DC A?@C' F=B ?>' I@@?' 1A ?E' > %' F ' DA ? ' G= ' I J @E' A' F@' A? E@C= A?' A1' F@' Z E>@ ' FC@@' A1' F@' Z E>@ ' EA I @E%' = ' 1 C %' GF@ F@C' F@' ? C J @? ' A E' I@' A? E@C@E' = ' =' G=CC=? ' G F ?' F@' J @=? ?>' A1' F@' = @' ;' 1AC' = ' F@' = @' @? J @C= @E' D@ 1 ' F ?> %' =?E' @] DC@ ' J @? A?@E' I ' A1' @] F=?>@%' F@ ' FA >F ' F= ' F@' GACE ' 7A F@C' G =CC=? H J ' J @=?' A J @ F ?>' I@ E@ ' =' I ' A1' @] F=?>@%' N F' = ' G=CC=? ' 1CA J' A J @' A1' F@' D I ' IA=CE ' 1AC' D= J @? ' A1' J A?@ d' I ' F@ ' =1 @CG=CE ' =ET J @E' F= ' F@' = @' A E' ?A ' I@' E ?> F@E' 1CA J' =' = @' A1

2*: / '' 49+4' +' 9 ** 2& /VP 19+') /' ;)94 9/' *+ :' +=' 9' 4&+((+' 4 &2(' 49/' "+# ; / ' 4 2& ; 2 ' /# 7 49 '' 49/' D' /2' H' Y' AM

b2=4' */44/(' &(2 ;' 49/' 4 ; /' 2& 4=' 3/ ')' : / ' J/(/ :' 42' +' "2=4' 2 1/' 42' 49/' 4 ; /' 2& 4=' 3/ ')' : /* J/(/ :' 42' 49/' "/(=2 '' 42' 792 ; ' 4' =' +: : (/==/ : $ +' :' 49/(/&2(/' 4' +==< ; /=' 49+4' 49/(/' =' 42' 3/' &4 "/(=2 '' 42' 792 ; ' 4' =' : (/14/ : W &&' /) ' e' 10/(=4+*&' G' ' ' ' DY ' /' /) ' &' !*+==' ' / ' ' ' G.A' G' ' ' ' HNA' 79/(/' +' */44/(' 1+((/(' 7+=' / ' 4(<=4/ :' 7 49' ; 2 ' /# '' +' = ' :' *+(; +' ' /(' 42' 234+ '' ; 2 ' /# 2(: /(=' +' ' 9/' 7+=' 9/*:' ' 24')< *4# 2&=4/ 7 ')' 49/' ; 2 ' /# ' +=' 9/' 9+:' ' 2' ' 4/ ' 4 2 '' 42' =4/+# 4' 79/ '' 9/ C@ @ B@E'

W]d 4' 7+=' '' 49/' &2** 27 ')' &2(;' ?Q' 2=4' ** 2 ' Y.GD ; ')9+ ; ' .H49' L/9 ' .DEH' (' ; ' / ; 2 '' 4 ' +' :' 2 ' 3+' 0/(=' 2 ' :2 ' ' '' +# A' ! =' 42' (' 19 :' 22(/ 2(' 9/+(/(' 2 '' : / ; 0' J+*</' (/1 [234' 2+*/= L J/' != '4 :' ' 22(/ =' 42' 49 =' 3/ ')' +' "2=4' 3 ** ' 4' 7+=' 23P =/(J/ :' 49+4' 49/' 72(: =' 2& 49/' 14' 7/(/' 0P :' "2=4' 3 ** ' S

1AC>@C %' GF@C@'=?' ?E J@?' = E' ?' F@' =J@' J=??@C' G=' FA E@?'
>AAE' ;' NWd' =?E%' F@ ' J = @ ' =DD@=C@E' A' F@' = 1@E' = ' A' F@'
?E J@?' ?' F@'DC@ @?' = @' F@'A F@C'? ?@'Z E>@ ' G@C@' @=C%'
F=' F@' ?E J@?' G=' G@ ' = E;' =' F@' ? C J@?%' FA >F'
' G=' =' I ' A1'@] F=?>@%' G=' = A' =' G=CC=?' 1AC' F@' D= J@?' A1'
JA?@ %' F=' ' G=' =' BA F@C' A' F@' F=?<@C %' AC' EC=G@@ %' 1'
>@? ?@%' 1AC' F@'D= J@? %' =?E' F=' ' J >F' = A' F=B@' I@@?' = E' = '
=' EC=1 %' 123'
9 P

& F@C@' F@' ?E J@?' F=C >@E' F@' DC A?@C%' = ' =' D@C A?' @ JT
D A @E' ?' AC ?>' @ @C ' ?' F@'DA A11 @%' G F' @ C@ ?>' =' @ @C%'
A? = ? ?>' =' EC=1 ' D CDAC ?>' A' I@' EC=G?' ?' A?EA?%' I ' GF F'
=DD@=C@E' A' F=B@' I@@ ' EC=G?' = ' * = E A?@' <4> ' <6 ! 2' 6 ' '
6&E' DA?' %' A? C=C ' A' F@' ' @A ' % ' -8% ' :% ' G= ' FA E@?'
F=' F ' G=' ?A ' =' EC=1 ' 1AC' F@' D= J@?' A1' JA?@ ' G F ?' F@'
.' @A ' % ' 8 % ' ' F@' AIZ@ A? ' =<@?' = ' F@' C = ' G@C@%'
1 C %' F=' =' EC=1 ' A?' =' I=?<@C' AC' I ' A1'@] F=?>@%' ?A ' = J D@E'
D C =? ' A' F@' ' @A ' % ' -8% =?E' .' @A ' % ' %@A E' ?A '
I@' C@ @ B@E' ?' @B E@? @'1AC'=? ' D CDA @;' F ' 1' ' G@C@' =E J I @%'
F@?%' @ A?E %' F=' F' =' EC=1 ' AC' I ' A1'@] F=?>@%' 1' ' A E' I@'
A' = @E%' A E' ?A ' I@' F@' IZ@ ' A1' =C @? %' ?= J F' = ' '
A E' ?A ' I@' A1' =? ' B= @' GF= @B@C;' =?E' F CE %' F=' I@ ?>' A'
?B= E%' ' A E' ?A ' I@' A? E@C@E' = ' =' @ C ' 1AC' F@' D= J@?'
A1' JA?@ ' G F ?' F@' -' @A ' % ' -8% ' % F@' @ C@ ?>' A1' GF F%
' GF@?' @? ' ?' =' @ @C%' =J@' G F ?' F@' J@=? ?>' A1' F@' .' @A ' %
' 8 ' F@' ?A @' G= %' FAG@B@C%' C@ @ B@E' ?' @B E@? @%' =?E' F@'Z C '
1A ?E' F@' DC A?@C' > ' ?E%' A?' =' = @' C@ @CB@E%' ' G= '
A? @?E@E' F=' F@' D=D1@C' ?' b @ A?%' D CDAC ?>' A' I@' =' EC=1 ' 1AC'
D= J@?' A1' JA?@ %' G= ' ?A ' ?' =G' =' EC=1 ' 1AC' D= J@?' A1' JA?@ %'
G F ?' F@' .' @A ' % ' 8 %' =' ' G= ' ?A ' = J D@E' D C =? ' A' F@'
= J D' ' ;' NWd' =?E' Fb %' I@ ?>' ? = J D@E%' ' G= ' ?A ' =' FA @' ?'
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I@ ?>' = J D@E' G= %A1' ?A' B= @%' ?AC' ?' =? ' B=' =B= =I @%' =?E'
F@C@1AC@' G= ' ?A ' =' I ' AC' EC=1 ' G F ?' F@' ' NId
& F@C@' F@' @ @C' @J I@KK @E' G= ' E@ C I@E' = ' F=B ?>' A? = ?@E'
@B@C=' ?A @ %' 'G= ' F@ E' A' I@' 11 @?' A' DCAB@' F=' ' A? = ?@E'
=? ' A?@' A1' F@ J ;' =?E' = A' F=' 1' F@' ? C J@?' ' DA?' F@'1= @'
A1' ' =' ?A @%' F@' J =<@CH' >?= C@' ?@@E' ?A ' I@' DCAB@E' ?' F@'
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DC A?@C' A' F=B@' I@@?' @J D A @E' ?' GA' IC=? F@ ' A1' F@' DA A11 @%'
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DA?' =?' ?E J @?' I?' F@' .' @A' ' 8 ' F@' F=C>@' G= ' = E' =>= ? ' F@' DC A?@C' ?' F@' 1 C ' =?E' F CE' A ? ' = ' =' D@C A?' 7 @ J D A @E' ?' AC ?>' =?E' F=C> ?>' @ @C ' ?' F@' DA A11 @' =?E' ?' F@' @ A?E' = ZE' 1A C F' A ? ' = ' =' D@C A?' 7 @ J D A @E' ?' F@' I ?@ ' C@ = ?>' A' F@' @?@C= '5A A11 @';' H =?E' DA?' F@' @B E@? @' ' =DD@= !@E' F= ' F@' DC A?@C' G= ' A? ' =' AC @C' =?E' ?A ' =' F=C>@C' A1' @ @C ' GF@C@ DA?' F@' Z C ' G@C@' E C@ @E' A' A?B ' F J' A?' F@' @ A?E' =?E' 1A C F' A ? ' A? ' ' =?' AIZ@ A?' G= ' =1 @CG=CE ' =<@?' F= ' = ' F@' DC A?@C' F=E' I@@?' = b @E' A?' F@'! A ? ' GF F' F=C>@E' F J' = ' =' AC @C' =?E' F=1>@C' =?E' F@' E E' ?A ' =DD@=C' A' '' =' D@C A?' @ J D A @E' I ' F@'!DA A11 @' ?' =? ' A F@C' I ?@ ' I ' F=' A1' AC ?>' GF F' ' A?@' A1' F@' @ J D A J @?' ' D=C =C ' D@ 1 @E' ?' F@' = @' F@' A E' ?A ' I@' A?B @E' A?' F@' @ A?E' =?E' 1A C F' A ? ' ?E' F ' AIZ@ A?' I@ ?>' I J @E' A' F@! A? E@C= A?' A1' F@' Z E>@ ' FA >F' F@' AIZ@ A?' B= E';' I ' F@ ' ? ?@E' A' F ?<' F=' F@' Z C ' J >F' F=B@' A?B @E' F@' DC A?@C' A?' F@' 1 C ' =?E' F CE' AF? ' I ' =' D@ = ' 1 ?E ?>' F=' F@' G=' =' AC @C' A? ' NAd

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J :/ '1/ FA >F' F@' DA A11 @' J =C< ' ?' AG?' AC' A ? C ' DCAB@E' A' I@' F' =C@' @B E@? @' F= ' F@' @ @C ' A?' GF F' F@ ' =DD@=C' G@C@' ?

W 4 +'=2 'S 1+=/' G /+19' .MNM' ' ' /+19' DN ' GHG' ':' =//' *+(O/S 1+=/' :' " B +7=2 'S 1+=/' G +=4' ' '1' .Y' "' GGA =' HN' "' YMA W2 9+7S 1+=/' G *+10' /"' DEN' W^ /V' /+(=2 (' I' M' ' ADG' G +=4' ' ' 1' .Y' =' G.' "' -1E' C 44*/ :+*/' +' :' 2=+' T /4'

F@ A11 @ A GF F FA @ J =C< I@ A?> = F@ E= @ GF F F@ D@ 1 @E; @ = J =C<1 EA I @ DA =>@ F=B ?>I@@?D= E A?=@ @C =?A A1 @ 1@B E@? @ F= F@ @ @C A? = ?@E=?@? A C@ DA?= = @ C@ @CB@E F@ Z E>@ F@ E = A?B A? GCA?> A? F@ >CA ?E F= F@C@G= ?A 11 @? @B E@? @ A1 = EA I @ @ @C F=B ?>I@@?D ? A F@D@ A11 @Z F@ @C< GFA D ? A F@ A11 @ D= E F@ DA =>@ =?E GCA @ DA D= E - H ?A F=B ?>I@@? = @E NVd

DA?= ?E J @? 1AC @= ?>= @ @C F@ = J @ DCAA1 A1 =?= DAC = A? 11 @? = ?F@ = @ A1 @= ?>'? A F@C F= @ & F@C@ F@C@1AC@ = D A?@C E E ?A E@ B@C = @ @C =?E I @ ?>= <@E 1AC DCAE @E 1CA J F DA <@ ? A GF F J F=B@ I@@?C@ J AB@E 1CA J F@ @ @C DA F =?E F@ Z C G@C@ A E F= 1 F@ G@C@ = 1 @E F= F@ DC A?@C D F@ @ @C ? A F DA <@ G F F@ ? @? A? A1 @= ?> AC @ C@ ?> F@ J >F I@ A?B @E =?E F@ Z CM 1A ?E F= F@ DC A?@C E@ = ?@E F@ @ @C G F F@ ? @? A? A1 @= ?> =?E A?B @E F J F@ A?B A? G= F@ E C >F N d

F@ A11@? @ A1 @ J I@KK ?> J A? @ C@ @ B@E 1AC F@ DA =>@ A1 @ @C G= J =E@ D ? F=I @ I F@ 8 @A -8 =?E F@ . @A 8 F @ =C@ C@D@= @E I F@ 3 @ -=?E F@ 3 @ A? = ? ?A DCAB A? 1AC F@ @ J I@KK @ J @? A1 J A? @ C@ @ B@E 1AC DA =>@ N d

& F@C@ F@ DC A?@C G= ?E @E 1AC @ C@ ?> = @ @C A? = ?T ?> = I =?< ?A @ 1AC @CM DA ?E F@ Z C 1A ?E D@ = F= F@ DC A?@C G= =?A11 @C @ J D A @E ?F@ I ?@ A1 F@ DA A11 @ ?= J D ?> =?E 1= ?> @ @C ; F= F@ @ C@ @E F@ @ @C ?b @ A? GF @ ?F@ @]@ A? A1 F A11 @ G FA AD@? ?> =?E G FT A <?AG ?> F= F@ @?DA ?E I =?< ?A @ G= A? = D@E ?; =?E F= F@ @ C@ @E G F ? @? A E@1C= E F@ < ?> A1 F@ DA =>@ F@C@A1 GF F F=E I @@? D= E F@ E@ @C J ?= A? A1 F@ Z E>@ DA?F = @ G= ?@B@C A J J ? = @E NGd >> @ @E F= F@ = @ @@J A 1= G F ?A?@ A1 F@ A11@? @ DCAB E@E 1AC I F@ 8 @A V8 ; FA >F AJ@ E 11 J >F F=B@ =C @?? IC ?> ?> G F ?F@ ACC@ DA?E ?> =E @ . @A 8 I @ = @ =DD@=C@E F= F@ @ @C F=E ?A I @@?E@ CA @E I] G= 1A ?E ?F@ DC A?@CH AE 7 3

?= = @ DA?F@ D @A 8 -= =DD@=C@E F= F@ DC A?@C ? @?E ?> A @= F@ J = I => G@? A?@ ? >F =IA F@ = J @ A F@ DA A11 @ = >F & AJ I@; =?E DC@T @?E ?> A I@ F@ J = > =CE A I = ?@E 1CA J F@ D@C A?GFA G= F@C@ F@ I => A1 @ @C GF F G@C@ @ EAG?A F J 1CA J A A1 F@ G ?EAG A1 F@ DA A11 @ I = C ?> 1CA J GF@? @ F@ AA< F@ J ; =?E J J @E = @ J =E@ A11 DA?F@ @ 1= F@ DC A?@C G= A?B @E A?= A ? ? F@ ?E J @? 1AC @iN ?> F@ @ @C A A1 F@ DA A11 @; =?E F@ = @ I@ ?> I J @E A F@ A? T E@C= A?A1 F@ G@ B@ Z E>@ F@ G@C@ = A1 AD ? A?= F= % F@

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A ? B A ? ' G = ' C > F ' ; ' = ? E ' F = ' F @ ' = C 1 @ ' A 1 ' F p ' D C A ? @ C % ' ? ' A I = ? ? > ' F @ ' E @ B @ C ' A 1 ' F @ ' @ @ C % ' ? ' F @ ' I = > % ' A ' A 1 ' F @ ' F A @ % ' G = ' F @ ' = J @ ' = ' 1 ' F @ ' F = E ' = = ' = < @ ? ' F @ J ' A ' F J @ 1 % 1 5 3 ' ? ' F ' = @ ' F @ ' D C A D @ C ' E E ' ? A ' D = ' ; ' = ' F @ ' D A J = @ C ' F = E ' ? A ' D C A D @ C ' ? ' @ ' J = ' I = > ' A ' D = C ' G F % 1 ? 3

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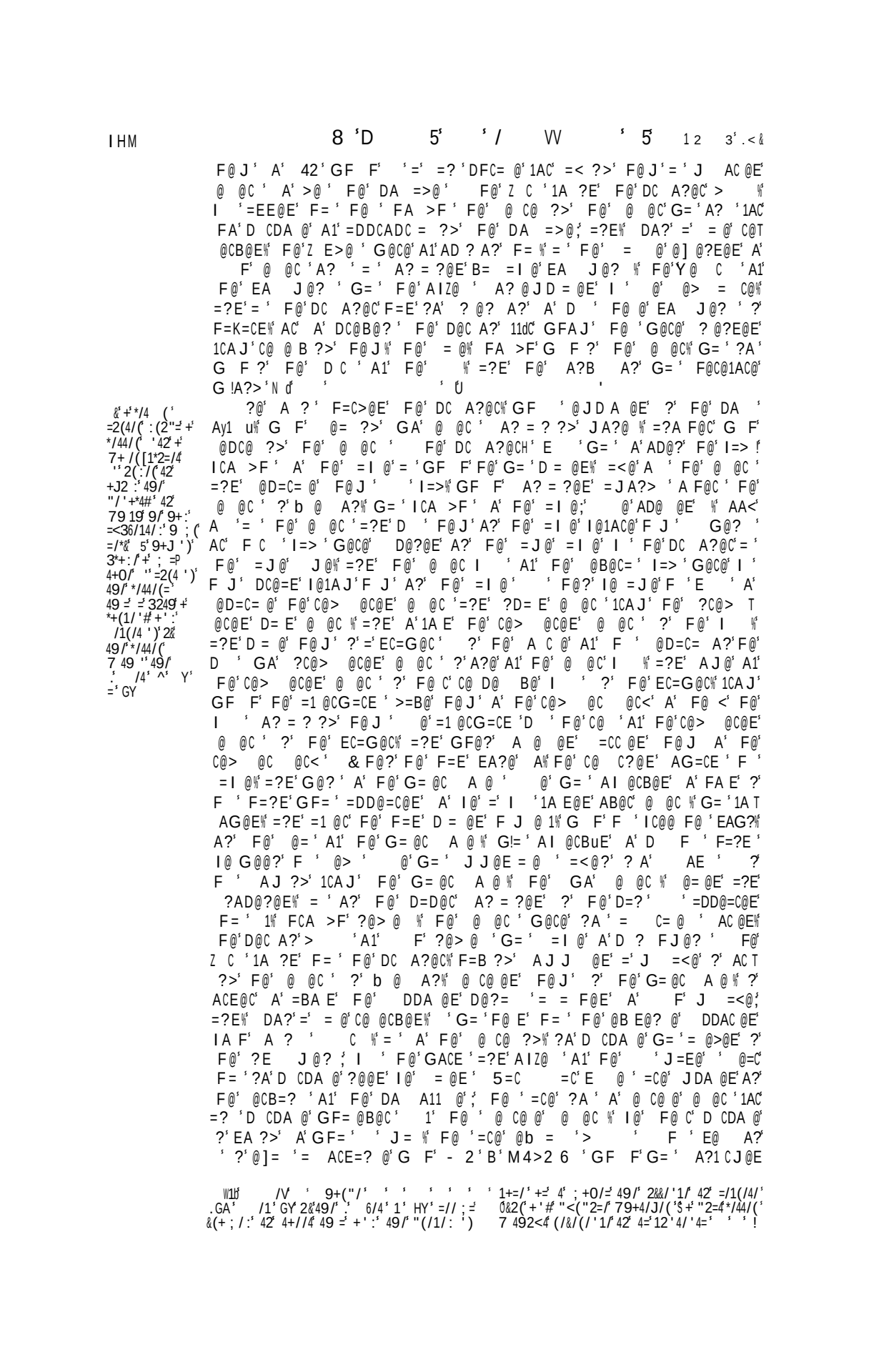

@ @C ' 1AC' F J ' ' G= ' A I Z@ @E' F= %' ?' ACE@C' A' DDAC ' F@' 1 C ' 1A C' A ? %' ' G= ' @ @? = ' A' FAG' F= ' F@' @ @C' G= ' =' 7DA ' @ @C%H GF F' ' G= ' ? A ;' = ' ' G= ' ?@ F@C' D ' ? A' F@' @ @C I A]' ?AC' E@ B@C@E' A' =? ' DA J = @C%' AC' A' =? ' D@C A?' = FAC K@E' I ' F@' DA A11 @%' AC' @B@?' = FAC K@E' I ' F@' DA J = @C' A' C@ @ B@' @ @C ' 1AC' F J ' ;' =?E' & >F J =?%' %' F@ E' F= ' = ! A' FA @' A ? ' F@' A I Z@ A?' J ' DC@B= %' = ' F ' G= ' ?@ F@C' =' 7DA ' @ @C%H ?AC' G@C@' F@' ?A @ ' A? = ?@E' ?' ' 7 @? ' I ' F@' DA H 723

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?E@C F@ 8- @A A : GF F DCAB E@E 1AC F@ 2=/= 2 2& ? @= ?> J= I=> , 1CAJ ?=? =C?=>@ AC 1CAJ F@ DA @ A? ;+ (:/(A1 =? D@C A? @JDA @E A A?B@ @ @C H ?= = @ GF@C@ = J= C E@C F=E 1]@E F@ J= DAC J=? @= A? F@ =EE @ A1 F FAC @ A? = ? ?> 1A C I=> A1 @ @C =?E F=E ?> F@ IC E @ A1 F FAC @ A?= =D @ = F@ =I @ EAAC A1 F@ DA A11 @ =IA F C =CE 1CAJ F@ EAAC A1 F@ FA @ =?E F@?G@? ? A F@ FA @ A D A?F > C@= A= =?E = @E =IA GA J ? @ =?E ? F@ ? @CB= F@ CAII@C AA< D = @ ; G= F@ E A I@ = @= ?> 1CAJ F@ DA @ A? A1 F@ J = C E@C 1,3

F@ . , 9 3 @ 9 - . =? ? =JD@E EA J@? J = 4+ ; " I@ C@ @ B@E ?@B E@? @ ? C J ?= = @ =?E F@C@1AC@ ??@ @ =C A C@ = ?F@ A E = @ A? F@ =EJ I A1 ?T =JD@E EA J@? Y

F@ , -3 @ 99 :7@B@C A11 @C A1 F@ DA ' A11 @ GFA F= >C=? EC @ =? JA?@ ACE@C G F= 1C= E @? & 1/(&(+' : '*/'44J ==<) ; 2 '/# 2(:/(= ? @? F= ? ?> =?E =?E C@ =?E I@ > A1 1@ A? =?E ? A =?E A1 = I >F C J @ =?E A11@? @ =?E F= = F@ E Cu A? A1 F@ A C @ F@C I@ C=? DAC @E I@ A?E F@ @= 1AC F@ @C J A1 @B@?@ @=C NGd AC I@ JDC A?@E 1AC =? @CJ ?A @] @@E ?> FC@@ @=C HNY?d

DA?=?E ?E J@? 1AC =? A11b? @D @? A?@E ?F F=D @C 2'J14 2 2& F@ DC A?@C J= ?E@C F@ : , 8 3 @ I@ A?T B @E A1 =?= @JD A AJJ F= A11@? @ =?E J= F@C@ DA?'1@@ D ? F@E ?F@ =J@ J=??@C = 1F@ F=E I@@?A?B @E A?=?' ?E J@? 1AC F= @JD NAd

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F@ , 9- 3 @ [F@ @ @>C=DF 9 9n N@? @E @@>C=DF [?' A @?=I @F@C * =Z@ H 5A J= @C @?@C= A= b C@ GAC<=?E J=? = ?' @ C @ @>C=DF nd @ - 7 ? D@C A?' F=B ?>A11 = E @ A??@ @E G F F@ DA A11 @ AC = ?>A?' I@F= 1A1 F@ 5A J= @C @?@C= 4GFA F= A? C=C A F E

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' @ ' - %' [' ?' @B@C ' = @' GF@C@' =?' ?11@? @' F= ' I@' AJ J @E' ?' C@ D@ ' A1' =' @ @>C=DF ' J @ =>@' @? ' I ' AC' ? C @E' A' F@' 5A J = @C @?@C= ' ' F= ' I@' =G1 ' =?E' 11 @?' ?' F@' ?E T J @? ' AC' C J ?= ' @ @C ' A' I@' DC@1@CC@E' =>= ? ' F@' A11@?E@C%' A' = ' F@' DCAD@C ' A1' F' @ @>C=DF ' J @ =>@' 4 ?' F@C' * =Z@ H ' 5A T J = @C @?@C= %' G FA ' D@ 1 ?>' =? ' 1 C F@C' AC' A F@C' ?= J @%' =EE A?%' AC' E@ C D A?' GF= A@B@C%' =?E' ' F= ' ?A ' I@' ?@ @ =C ' ?' F@' ?E J @? ' AC' C J ?= ' @ @C ' A' = @>@' AC' A' DCAB@' DA?' F@' C = ' AC' A F@CG @' F= ' F@' @ @>C=DF ' J @ =>@' G= ' A1' =? ' B= u%' =?E' ?' =? ' ?E J @? ' AC' ?' =? ' C J ZZ= ' @ @C ' A' I@' DC@1@CC@E' =>= ? ' =? ' D@C A?' @ J D A @E' J E@C' F@' D A11 @' 1AC' =? ' A11@? @' A J J @E' ?E@C' F ' ' ' F= ' I@' =G1 ' =?E' 11 @?' A' = @' =?E' = @>@' F= ' F' A11@?E@C' G= ' @ J D A @E' ?E@C' F@' DA A11 @' = ' F@' J @' A1' F@' A J J ?>' A1' F' A11@? @%' G FA ' = ?>' 1 C F@C' F@' ?= C@' AC' D=C =C ' A1' F ' @ J D A J @? n

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F@' 9' , ' ' 3 @ ' ' ' A? A E= @ ' =?E' = J @?E ' F@' '
C@ = ?>' A' F@' DCA @ A?' A1' D I ' AC@ %' =?E' G ' I @' 1A ?E'
E4 ' F' ' '
5CAB A?' ' J =E@' I ' F@' ?? = ' * ? ' ' 1AC' F@' D ? FT
J @? ' A1' D@C A? ' @ J I @ ?>' J =C ' =?E' ?=B= ' AC@ %' I ' F@'
DCA @@E ?> ' A1' =' A C J =C = %' I ' = ' = @C= A? ' =Cu' J =E@' ?'
F@ @' DCAB A? ' 1CA J ' J @' A' J @%' ' ' ?A ' =EB = I @' A' ? CAE @'
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A' I@' DC ? @E' =?E' EC @E' ?' =' @C = ?' I E ?>%' 'G=' F@ E' F= %' ?'
ACE@C' A' DDAC' F@' =D =' F=C>@%' 'G=' ?@ @ =C ' A' DCAB@'
F=' F@' I E ?>' 1CA J' GF F' F@' = A' G=' A @?' G=' J=E@'
@' A1'@ F@C' 1AC' EC ?>' AC' DC ? ?>' = A' N Md' ' ' FA E' I@'
AI @CB@E%' F=' F ' C@D@= @E' = @' J@? A?@E' D=C =C ' ='
I E ?>%' , ' J=E@' @' A1' I '=? ' = A' DC ? @C%' , ' 1AC' DC ? ?>%'
GF @? ?>%' IAG< ?>%' I @= F ?>%' AC' EC ?>

'F=' I@@?' E@ E@E' DA?' F@' .' ,' 9' @A' :%' ' %' ' %' F=' >AAE'
C@ J = ?' ?' =' 7 =>@%H 7DCA @ %H AC' 7DCA>C@ ' A1' J=?D1= C@%H FA >F'
F@' @] C@' I@' AJD @ @%' 1' F@ ' I@' ?A ' @ ' ICA >F ' ? A' =' A?E T
A?' 1 ' 1AC' = @%' R3B'

DA?' F@' C = ' 1AC' =F ' A11@? @' J@? A?@E' ?' F ' F=D @C' F@'Z C ' 2'J142'' 2&
J= %' ?E@C' F@' :' ,' 8' 3 @ ' ' %' ' %' A?B ' F@' DC A?@C' A1' 444= @JD%'
=?' = @JD ' A' AJJ ' F@' =J@%'=?E' F@C@ gdA?' F@' J= ' I@' D ? F@E'
?' F@' =J@' J=??@C' = ' 1' F@' F=E' I@@?' A?B @E' A?' =?' ?E J@?'
1AC' F' = @JD ' I!3

Wwb' /V' ' V2'' ' ' ' AH' YIN' 2*/(:)/' ' //' 49 =' 1+=/'
"3B' /V' ' 22:9/+:' .' ' ' 23' " B' J .' J2*' .' "' YG

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Q 2&&/ '1/ +4 12 ; ; 2 '* +7 (G= A?> EA I @E GF@ F@C% = = AE>@C F=E = D@ = DCAD@C ?' F@ >AAE GF F G@C@ @ G F F AE> ?> % F@ @= ?> A1 F@J G= 1@ A? $N=d =?E G= = @?> F E@ E@E I = = J=ZAC A1 F@ Z E>@ F= G= ?A N d ?' A? @b @? @ A1 F ! E@ A?% F@ & J , * % @B@C= DA ? A1 ? @ =?E E 11 =CA @ DA?' F@ A? C A?' A1 F = @% =?E DA?' F@ = @J @? A1 F@ A? C= ?' F@ ?E J @? % =?E G= C@T D@= @E I F@ . , 9 @A = =?E F@ Y 4 I @E = JAC@ JD @ @?= J @? ; I F= = @ ?AG C@D@= @E%

/ '+' 4 2(*2 :) / (=4/+* ') 1*+44/* 2(& V4<(/ */4 42 9 (/ 7 49 92<=/ 2(*2 :) ')= F@ - 8 3 @ % . :% 7GFA A@B@C F= @= =? F= @ AC 1] C@ @ A I@ @E I F J ' C F@C ?' AC G F =? FA @ AC AE> ?>% GF@ F@C F@ A? C= F= F=B@ I@@?' @? @C@E ? A I F J ' AC F@C% AC I F@C F I=?E% AC =? D@C A?' A?' I@F= 1 A1 F J AC F@C AC F@C F I=?E% F= I@ > A1 1@ A? % =?E I@ ?> A?B @E F@C@A1 F= I@ =I @% = F@ E C@ A?' A1 F@ A C % A I@ JDC A?@E 1AC =? @CJ ?A @] @@E ?>' GA @=C % G F AC G FA F=CE =IA C% =?E G F AC G FA A =C A?1 ?@J@? % =?E% 1 =' J= @ ?E@C F@ =>@ A1] @@?' @=C % G F AC G FA GF DD ?>% =?E ?' = @ F@ B= @ A1 F F= @ AC 1] C@ F= @] @@E F@ J A1 1 B@ DA ?E % F= I@ =I @% = F@ E C@ A?' A1 F@ A % A I@ < @D ?' D@?= @CB E@ 1AC =? @CJ ?A @] @@E ?> @B@?' @=C =? :' ?A @ F=?' FC@@' N d @=C % ` AC A' I@ JDC A?@E 1AC =? @CJ ?A @] @@E ?> GA @=C % G F AC G FA F=CE =IA C% =?E G F AC G FA A =C A?1 ?@J@? % =?E% 1 =' J= @ ?E@C F@ =>@ A1] @@?' @=C % G F AC G FA GF DD ?>% =?E ?' @B@C = @ A1 @= ?> =? F= @ ?' F @ A?' J@? A?@E F= I@ =G1 A DC@1@C =?' ?E J@? ?' F@ AJJA?' 1AC J = 1AC =C @? % =?E ?' @B@C @= @ A1 @= ?> =? 1] C@ ?' F @ A?' J@? A?@E A DC@1@C =?' ?E J@? ?' F@ =J@ 1AC J = 1 F@ A11@?E@C G@C@ ?A = @?=? ACAE>@C% =?E ?' @ F@C = @ A = F@ DCAD@C ?' F@ AG?@C AC D@C A?' @ ?> A F C@ H N W

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" +J/ ' =42 ' 1+=/ X D W1 24 */== 49+ ' &J #/+(= & 49) 1C . +70 M 1 IH ' = G 2&&/ ' 1/ 7+= 12 ; ; 44/ : +&4/(49 GA49 2& " //(/= 1+=/ O27 AM 9 <*# .EY I //J2* . " DH)(2< : 2& 49 = : /1 = 2 " 7+= 49+4 49 " 9 = 1*+<=/ = 4+0/ " &(2 ; 49 D *2 :) / (+ : ' 24 49 */ *+ : *2(: 9+= 49/ E ! /2 I 1 GN ' = IA? N ! /2 I 1 YA b2==/== 2 " : <( ) 49/ 4 ; / &2(7 9 19 49/ = HE W b? + ' : .G ' .H 14 1 . : = G 2 :)) = +(/ */4 + ' : 49/ (/&2(/ 49/ *+ ' : P = 42 9+(: *+32<(1 = / : " " A. ? *2(: 1+ ' 24 ; + 4+ " 4(/= "+== &2(4+0) J2* . " " " EM E. 9/ 14 : 2/= 24 /VP 49/) 22 : = /V & /*=4/+ : + # 4/ ' : 42 124*+ ' : */# + ' : I . .

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F=Es ?As ? @? s As E@1C= Es ^ 163
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D=C ' A1' F ' DCAD@C ' A ' F@' B= @' A1' @?' DA ?E ' N d' AC' DG=CE %' AC' A? @= ' =? ' E@I ' E @' A' AC' 1CA J ' F J %' ? @ ' F@' Z C ' ' = 1 @E' F= ' F@' F=E' ?A' ? @? ' A' E@1C= E$

N8 d' 1' =1 @C' F@' DC@ @? = A?' A1' =' I=?<C D ' D@ A?' =>= ? ' F J ' AC' F@' A J J @? @ J @? ' A1' F@' b E= A?%' AC' G F ?' 1A C' J A? F ' ?@] ' I@1AC@' F' DC@ @? = A?' AC' A J J @? @ J @? %' F@' 1C= E @? ' C@ J AB@ ' =? ' D=C ' A1' F ' N d' DCAD@C ' A1' F@' B= @' A1' @?' DA ?E ' AC' DG=CE $

N d' 1' F@' J =<@ ' =? ' J = @C = ' A J A?' ?' =? ' = @ J @? ' C@ = ?>' A' F ' =11= C %' ? @ ' F@' Z C ' ' = 1 @E' F= ' F@' F=E' ?A' ? @? ' A' E@1C= E$

WD d' &' 0 '27 ')' 2(3/* /J ')' 49+4' +' &+*=/' :/34' 9+=' 3// '' "(2J/ :' 3# + '# "/(=2 '' <' :/([49/' 3+ '0(<"41# 2(* T< :+4 2 ' ' Whd' 9/' &+ *' &2(49/' "/(2 :' 2&' +' ; 2 '49' 42' '&2(;' =<19' 4(<=4//' +=' +&2(/=+ :' 49/(/2&m

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N d' 1' =1 @C' F@' DC@ @? = A?' A1' =' I=?<C=D ' D@ A?' =>= ? ' F J ' AC' F@' A J J @? @ J @? ' A1' F@' b E= A?%' AC' G F ?' 1A C' J A? F ' ?@] ' I@1AC@' F' DC@ @? = A?' AC' A J J @? @ J @? %' F@' A? @= %' E@ T CA %' J = @ %' AC' 1= 1 @ %' AC' ' DC B ' A' F@' A? @= J @? %' E@ C T A?%' J = A?%' AC' 1= 1 = A?' N@d' A1' =? ' IAA<' AC' EA J @? ' =11@ ?>' AC' C@ = ?>' A' F ' DCAD@C ' AC' =11= C %' ? @ ' F@' Z C ' ' = 1 @E' F= ' F@' F=E' ?A%' ? @? ' A' A? @= ' F@' = @' A1' F ' =11= C ' AC' A' E@1@= ' F@' =G' ;

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F J AC F@ AJ J@? @J@? A1 F@ b E= A? AC G F ?1A C JA? F ?@] I@1AC@ F DC@ @? = A? AC AJ J@? @J@? F@ 1C= E @? d=C G F = @C AC J =< @ =? AJ A? AC DC B A F@ 1C= E @? D=C ?> G F = @C ?> AC J =< ?> =? AJ A? ?=? EA T J @? =11@ ?> AC C@ = ?> A F DCAD@C AC =11= C $

N - d 1 =1 @C F@ DC@ @? = A? A1 = I=?<C D D@ A? =>= ? F J AC F@ AJ J@? @J@? A1 F@ b E= A? AC = =? J@@ ?> A1 F C@E AC G F ?1A C JA? F ?@] I@1AC@ F DC@ @? = A? AC AJ J@? @J@? F@ = @J D A = A ? 1AC =? D=C A1F DCAD@C I 1 A A @' DC @]D@? @ $

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N d 1 G F ?1A C JA? F ?@] I@1AC@ F@ DC@ @? = A? A1 = I=?<C a D@ A? =>= ? F J AC F@ AJ J@? @J@? A1 F@ b E= A? F@ I@ ?> =E C=E@C AI = ? ?E@C F@ 1= @ DC@ @? @ A1 =CC ?> A? I ?@ =?E E@= ?> ? F@ ACE ?=C & =A1 F C=E@ =? DCAD@C A? C@E =?E F= ?A D= E 1AC F@ =J@ ? @ F@ Z C = 1 @E F= F@ F=E ?A ? @? A E@1C= E $

N 8 d 1 G F ?1A C JA? F ?@] I@1AC@ F@ DC@ @? = A? A1 = I=?<C D D@ A? =>= ? F J AC F@ AJ J@? @J@? A1 F@ b E= A? F@ I@ ?> =E C=E@C D=G? D @E>@ AC E DA @ A1A F@CT G @ F=?? F@ ACE ?=C G= A1 F C=E@ R=? DCAD@C GF F F@ F= AI = ?@E A? C@E =?E F= ?A D= E 1AC ? @ F@Z C = 4 1 @E F= F@ F=E ?A ? @? A E@1C= E ; NZd a

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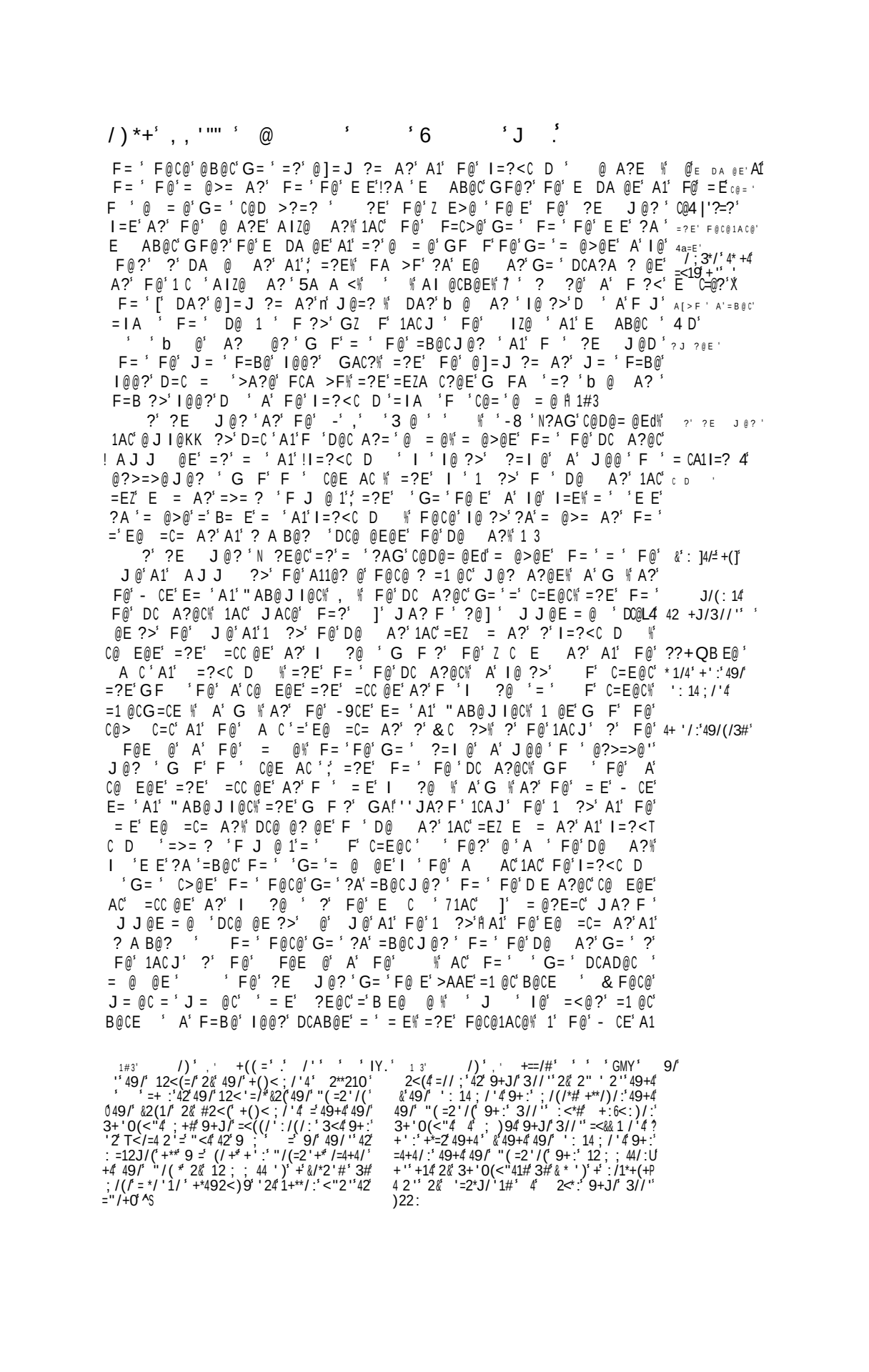

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R*' ' /) ' ' +' :=' /+(=' ' ' AYD' 9/' &2**27 ')' " 2 ' 4=' 7 /(/' +*=2' (+ =/ : ' 9<4' ' 2' 2" ' 2 '' /V"(/==/ : ' 2 '' 49/ ; ' .' 9+4' 3# 49/' <=/' 2& 49/' 2(:' 03+ ' 0(<"4' $ '' =/1 ' GAH ' 49/' /) =*+4<(/' ; <=4' 9+J/' ' 4/ ' : / : ' +' " /(=2 '' 792' 9+ : ' 12 ; ; 44/ : ' + '' +14' 2& 3+ ' 0(<"41#' 3/&2(/' 234+ ' ')' 1(/ : 4 2(' 12 ' /2+* ')' 49/')22 : =' G' 9/(/' JJ+= ' 2 " (22& 2& ' + ' # 2(: / (' 2(' (/T</=4' 42' =/ ' : ' +' #)22 : =' 7 49&< 49(/' ; 2 ' 49=' ' /V4' 3/&2(/' 49/' + : 6<: 1+4 2 ' ' + ' :' 4' 7+=' 12 ' P 4/ ' : / : ' 49+4' 49/' ; /(/' (/1/ J ')' 2&)22 : =' 7 49 '' 49+4' 4 ; / ' '' 12 ' =/T</ ' 1/' 2& " (2(' 2(: / (=' : :' ' 24' 12 ' =4 4<4/' 49/' 2&&/ ' 1/ ' H ' 9/(/' 7+=' /J : / ' 1/' 2& (/ ; 2J ')' + ' :' 12 ' P 1/+* ')' 7 49 '' 49(/' ; 2 ' 49=')22 : =' 2(: /(/ : ' 3/&2(/' 3<4' (/1/ J/ : ' 7 49 '' 49/' 49(/' ; 2 ' 49=' ? + ' : ' 4' 7+=' 12 ' 4/ ' : / : ' 49+4' 49 = : :' ' 24' 12 ' =4 4<4/' 49/' 2&&/ ' 1/' 2& (/ ; 2J ')' 2(' 12 ' 1/+* ')' 7 49 '' 49+4' 3(+ ' 19' 2& 49/' 1*+<=/ ' +=' 4' +" "* / : ' 2 ' *# 42' 1+=/= 7* / (2)22 : =' 9+ : ' 3/ / '' 234+ ' / : ' '' =<19' ; + ' ')(+=' 42' &+*# 7 49 '' 49/' &2(; /(' 3(+ ' 19 +)+ ' =4' 234+ ' ')') 22 : =' 2 '' 1(/ : 4 1 3' /) ' ,' +: 1* &&/ ' G' 22' ' ' ' YE' ' ' G' / 7 ' AD ' 79/(/' 49/' ' : 14P ; / ' 4 =' =/ 4 2<4 +4 * / ') 49 ' 4' 7+=' &<(49/(' 236/14/ : ' 4* +4' 49/' ' : 14 ; / ' 4 2 ' *# +** /) / : ' 49+4' 49/' & +4' 7+=' 0 ==</ : $ ' 24' 49+4' 4' 7+=' 0 : <*# ==</ : ' 3<4' ** + ; =' ' 9/*: ' 49+4' 49/' 72(: ' 0 : <*# $ 7+=' 3/44/(' 2 ; 44/ : ' +=' 9/' 7+=' 32<' : ' 42' 6 (/=< ; /' 49+4' 4' 7+=' : <*# ==</ : ' +=' 4' 7+=' ==</ : ' 3# 12 ; " /4/ ' 4 +<492(4#' 9 =' " 2 ' 4' +*=2' 7+=' (/=/(J/ : ' 3<4 ' 24 ' : /1 : / : ' 3# 49/' 6<:) /=' /' . I ' ' 14' 1 ' . MM ' =' G I ' J2*' . ' " ' HA "C⅋ /V' , ' 3 . ' 6 ' ' ' HNG

YGFA@ A1 F ?E J@? F@ DC A?@C F=B@ 1C= E @? A J @E A A1 F F@E @ F@ >AAE J@? A?@E ?F F ?E T J@? GF F BB@C@?A J@? A?@E ?F F@ = ;=?E ?DA ?A1 =G F ?< =DCA @ AC J = DC@1@C @D=C= @ ?E J@? 1AC @= F F AJ A? FA >F F@ DC@ @?? ?E J@? F@ ?DA ?A1 =G J = ? = ?=I @ =??A F@ D = ?>F= @] @D ?> ?E@C B@C D@ =C C J =? @ F ?< F =F@ A C @A >F ?A A I@ D CT @E ;=?E 1 F@ = @ >A@ A?; F= CA?> =EB @ F@ Z C A = b F@ DC A?@C ? @ F@ F ?< F= F@ >AAE ?AG 1AC F@ 1 C J @ ICA >F 1ACG=CE G@C@ AJ @E A A1 F@ F@E @ ?E@C C J =? @ @ @? = E 11@C@? 1CAJ F@ A F@C NAd

; ==2'=' '' +'' '=2*J/ '4S= ="/1 +* 4+ *+'1/ =9//4

DA?=?? ?E ? @? ?E@C F@ , '' 3 R N?AG C@D@= @Ed =>= ? =?? A B@? 1AC G 1 =?E 1C= E @? AJ ?>J A1 JA?@ 1CAJ F F@E @ G= AD@?@E F= F@ AJ A? G@C@ FA @ A1 @C = ?' J A1 JA?@ GF F F=E I@@?' C@ @ B@E I F J DC AC' A F@ E= @ A1 F@ B@ ?>' ACE@C =?E GF F ?' = ACE=? @ G F F@ 3 @ FA E F=B@ I@@?' ? @C @E ?' F@ D@ = I= =? @ F@@ GF F F=E I@@?' 1 @E : F@ E@1@?E=? ;' F@C@ FAG@B@C F@ F=E I@@?' AJ @E ACE I ?>@C F@ F@ E F= F@ ?E J@? GA E?A @' ?E@C F@ C J =? @ F@ D@ = I= =? @ F@@ G= = G@C@ =' J@C@ J@JAC=?E J A1 F@ ? A B@? H C@ @ D =?E E I C @J@? 1AC F@ > E=? @ A1 F@ A C =?E =' J=?' FA E ?A I@ F@ E F C J ?= C@ DA? I @ 1AC @CCAC! F@C@ ?' F@ A? @b @? @ A1 F =?' ? @CDC@ = A?' A1 @ = GA E I@ ?@ @ =C 1AC F@ D CDA @ A1 F ?E J@? GA E I@ A J =<@ =F >F D@?= = @ =DD A = @ DA I A1 ?A ? @? A?= 1C= E =?E A1 AJ D=C= B@ C 1 ?>' ?= C= F@ @ A?' =DD @E A? A = @ GF@C@ F@ AJ A?' GA E =11@ F@ ? @C@ A1 F@ C@E AC =?E ?A GF@C@ =' J@C@ AJ A?' A1 JA?@ C@ @ B@E =?E I @b @? @]D@?E@E I F@ ? A B@? NDd

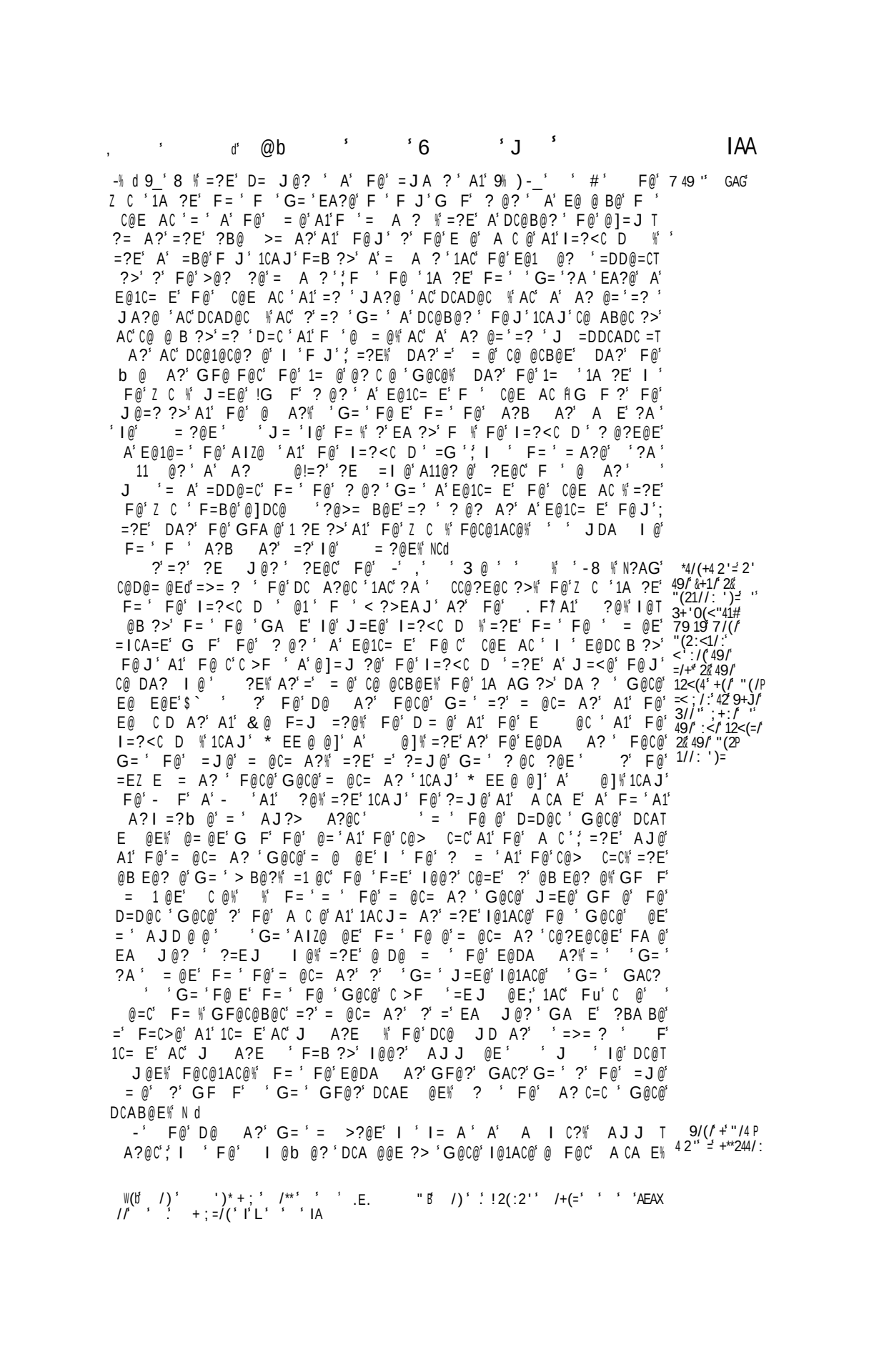
9 '4/ '4 42 :/&(+<:' 2J/(P (2: 49 792* 2 =' . G 2 49 Y !/2' I 1' .Y

?' ?E J@? ?E@C F@ @A :' N?AG C@D@= @Ed = @>@E F= F@ DC A?@C 1@ A? A E E?A I@1AC@ FC@@ AH A <' DA?' F@ 1AC @ A?E E= =1 @C ?A @ A1 F '' 1 = , CC@?E@C F J @ 1 A F@ AJ J A?@C I GFA ?@> @ @E =?E AJ @E A EA A ;H =?E G= F@ E F= F@ ?E J@? G= I=E 1AC AJ ?>' A= @>@ F= F@ DC A?@C ? @?E@E A E@1C= E F C@E AC =? = F@ GACE 1G F ? @? A E@1J E F C@E AC H AB@CCAE@ F@ YGFA@ A1 @ -A1 F@ @A :' á 1 3

9/((; <=4 9+J 3// '' +' 0 '4/ '4 42 : /P &(+<:' 9 1(/P : 42(= $ '' +:P : 4 2'' 42 +' '4/ '4 42 : /&/+4 49 236/14 2 49 *+7 (/*+4P ')' 42 3+'0P (<"4=' 42 3(') +3+'0(<"4

F@ DC A?@C G= ?E @E ?E@C @ -8-A1 F@ - , 9 3 @ N?AG C@D@= @Ed 1AC F=B ?>' J=E@ =1= @ @? C ?= IAA<A1 = A ? G F ? @? A E@1C= E F RH@E AC @ F=E <@D =IAA< ?GF F F@ @? @C@E F C@ @ D =?E D= J@? =?E = F@ J@ A1 F I=?<C D F= IAA<' F@G@E' C@ @ D A' F@ =JA ? A1 # =?E D= J@? A' F@ =JA ? A1 9 _ @=B ?>' =' E@1 @? A1' # A' I@ = A ? @E 1AC U @ =>' ?@= = A = A ? ?>' 1AC F E@1 @? F@ J=E@ =1= @ IAA< ?' GF F F@ @? @C@E' 1= @ =JA ? ADDA @ J=? A1' F@ @J A1' C@ @ D =?E' D= J@? A' = F@G C@ @ D I F J' A! F@ =JA ? A1

W2 /) * + ; "' /#=' G 23 @ # +&4/(12 '=<*4 ') +4 GY' /! /V &' W 5.' A' GH' 4/=5'' /) X' *42 '' G 0. M' * 5 H.E' 2**210 /' +' :' &/==7/** +&4/(4 ; /'4+0/ '' 42 12 '= : /(49/' T</=4 2 '' " B /VX' +(' /(' YGE' &/ /) X' **' .YE' D



42' 2 ' /' 12 ; ' ' == 2 ' / (' '' &2 ' : 2 '' 4' X+# 4 / ' " (2P 1 / / : / :' 7 49' 3# +' 249 / (

J J A=@C% AC' A? I =?b @%' A J J A?@C;' =?E' ' G= ' AIZ@ @E' F= ' F@' DCA @@E ?> ' A E' A? ' I@' =<@ ' I@1AC@' A I C?%' AJT J A?@C%' ? @ ' F@' ACE' F=? @ AC' A F@CG @' ACE@C@E ' ' ' G= ' F@ E' F= ' @= F' A J J A?@C' F=E' F@' 1= ' DAG@C ' A1' =' A C %' =?E' F= ' F@ ' A E' F=?>@' F@' E @ ' = J A?>' F@ J ' G FA ' @=B@' A1' F@' F=? @ AC%' N d

(22&' 2&' =/+(19' &2 (' *2= J + ' :' ' 24 1 /' 42' " (2 ' :<1 /' 2" # 2& +: 6<: 1+4 2 ' ' + ' :' ' 24 1 /

' F@' E D = @' =EZ E = A?' G= ' @1 ' = ' F@' A ? ?> FA @%' I @ ?>' F@' = ' =?E' = ' <?AG?' D = @' A1' I ?@ ' A1' F@' I=?<C D %' A?' F@' - ' A1' ?@ ;' = ' F@' D=D@C ' =?E' DCAD@C ' A1' F@' I=?<C D ' G@C@' F@? @' C@ J AB@E%' =?E' F@' D = @' G= ' A <@E' D' A?' I@F= 1' A1' F@' = >?@@ ' A?' ! F= ' E= ;' I ' F ' D=D@C' G= ' @1 %' =?E' G= ' @@?' F@C@' =' 1AC ? >F ' =1 @C' F ' C@ J AB= ' ?' Fb' - F' A1' ' F@' J J A? ' A' =DD@=C' G= ' @1 ' = ' F@' = J @' A ? ?> FA @%' GF F' &= ' ? A <@E' 1AC' F@' D CDA @%' =?E' F@?' A <@E' D' =>= ? ' @1AC@' F@' C = ' F@' A ? ?> FA @' G= ' @=C F@E%' =?E' ?@ F@C' A1' F@ @' D=D@C ' G= ' 1A ?E ' " A @' A' DCAE @' F@ @4' D=D@C ' G= ' @CB@E' A?' F@' DC A?@C' ?' DC A?' 1AC @ >F ' FA C ' I@1AC@' F@' C = ' I@>=?' C @%' %' =E J @E' F@' E D = @' AC > ?= ' A?' F@' >CA ?E' F= ' ?A' ?A @' A' DCAE @' G= ' ?@ @ = %' =?E%' 1' ' G= % F= ' F@' @=C F' 1AC' F@' AC > ?= ' =?E' F@' ?A @' A' DCAE @' G@C@' 11 @? ;' =?E' ' G= ' F@ E' F= ' F@' @=C F' G= ' 11 @? ' F@' EA J @? ' G@C@' @1 ' = ' F@' = ' <?AG?' D = @' A1' I ?@ ' A1' F@' I=?<C D ;' @=C F' G= ' J =E@' = ' F= ' D = @%' =?E' F@' EA J @? ' G@C@' ?A ' 1A ?E;' F@' DC@ ' ' J D A?' ' F@C@1AC@%' G= ' @ F@C' F= ' F@' I=?<C D ' F=E' >A ' F@ J %' AC' F= ' F@ ' F=E' >A ' ? A' F@' I=?E ' A1' AJ@%' D@C A?' A' GFA J ' F@ ' G@C@' A1' ?A' J DAC =? @%' =?E' GFA%' F@C@1AC@%' F=E' E@ CA @E' F@ J ' 1' A ' EA' ?A ' 1 ?E' =' EA J @? ' ?' F@' ACE ?=C ' D = @' A1' E@DA %' AC' ?' F@' F=?E ' A1' F@' D@C A?' GFA' F= ' =?' ? @C@ ' ?' DC@ @CB ?>' %' ' J = ' I @' D J J @E' b' I@' A %' 1 3

+(+' 1/' 3/P 47 / / '' 49/' " (2 ' / / / : ') =' +' :' ' 24 1/' '' 49/' > V

: ' ?' F@' DC@ @E ?>' DCA @@E ?> ' F@' I=?<? D ' G@C@' E@ C I@E' = ' A1' & @ F=J =?@%' @] ;' I ' ?' F@' Y68 ' F@ ' G@C@' E@ C I@E' = ' A1' & @ F=J =?@%' * EE @ @] ;' =?E' ' G= ' F@ E' F= ' F ' G= ' J @C@ ' *6 6' # & 4 "6 !4 ' GF F' E E' ?A' F=C J %' =?E' ?A' A?@' A E' EA I ' F= ' F@' I=?<C D ' G@ ' <?@G' GFA' G@C@' J @=? ' I ' F@' E@ C D A?%' N d

' ' 24 1/' =) ' / :' 3# 2 ' / ' 12 ; P ; == 2 ' / (' 42' +' "" /+(' 3/&2 (/' +' 249 / (' +' :' =/ (J / :' +&4 / (' 49 /' (=4' : +# +' "" 2 ' 4 / :' &2 (' +' "" /+(+' 1 / ' =' +* :

8 ' F@' Y68 ' C@b C@E' F@' @?E@C' A? F@' . F' A1' ' =?E A?' F@' F' A1' > ' F@' J J A? ' = @E' F= ' A CA E%' AJT J A?@C%' C@b C@E% F@' I=?<C D ' A' =DD@=C' I@1AC@' A I C?%' A J J A?@C%' A?' F@' . F' A1' ' =?E' F' A1' > ;' I ' ' G= ' ?A ' @1 ' = ' F@' A ? ?> FA @' ?' * ? ?> =?@' ' F@' - . F' A1' ;' ' G= ' A IZ@ @E' F= ' A CA E%' A J J A?@C%' F=E' ?A' = FAC ' A' @' F@' J J A? %' =?E' F= ' F@' @CB @' =1 @C' F@' . F' A1' ' G= ' ? 11 @? ;' I ' ' G= ' F@ E' F= ' F@' 1 C ' >CA ?E' A1' F ' AIZ@ A?' G= ' E DA @E' A1' I ' F@' C ?>' A?' F@' @ A?E' DA ? ;' =?E%' AA< ?>' = ' ' :' =?E' -8 %' ' G= ' @=C' F= ' F@' I=?<C D ' G= ' A' F=B@' ?A @' A' =DD@=C' =?E' E D @' F@' =EZ E = A? ' ' AC' CC@?T E@C' A?' F@' E= ' J @E' 1AC' F= ' D CDA @' ;' =?E' F@' E= ' J @E' G= ' F@' = ' A1' F@' GA' E= ' ?= J @E' ?' F@' ?A @%' 1 3' ' (

24 1/' 42' +" P " /+(' 3/&2 (/' +' 12 ; ; == 2 ' / (' 792' : :' ' 24 = 4

' ' A I C?%' AJ J A?@C%' E E' ?A ' ' A?' F@' E= ' A?' GF F' F@' I=?<C D ' G@C@' J J A?@E' A' =DD@=C%' ' G= ' AIZ@ @E' F= ' F@' I=?<C D ' A E' ?A ' CC@?E@C' A' F J ;' I ' ' G= ' F@ E' F= ' F ' F=E' I@@?' E DA @E' A1' I ' F@' C ?>' A?' F@' @ A?E' DA ?

. ? A?@ E D = @=EZ E = A?? I=?<C D =?E A? A?@ 9/(f 62 '4
E D = @ J J A? A CC@?E@C G = @CB@E =?E = F@ =EZ E =T 4(J*/(= +(/
A?? G = =>= ? GA ZA ? G = C>@E F = GA E D = @=EZ T ; + : f 3+ 'OP
E = A? =?E GA ?A @ A >F A F=B@ I@@?? @1 = F@ A ? ?> (<"4= 2' f '2P
FA @; =?E G = F@ E F = F@C@ A >F A F=B@ I@@?? = @D=C= @ 4 1f 2& + :6<: P
=?E E ? ?A @ 1AC @= F I=?<C D & F C@ D@ A D@C A?= 1+4 2 ' + ' :
@CB @ G = b @ @=C F = GF@?? F = J AE@ A1 @CB @ G = 2' f '24 1f 42
C@ AC @E A F@C@ J I@ =' @D=C= @?A @ @CB@E A?? @= F I=?<T +"" /+(= /(J/ :
C D =?E A ?? @CB @ = F@ =AC = D = @ A1 = IAE@ J +f 49/ (<=<+
I@ = @CB @ = F@ = D = @ A1 = IAE@ A1 @= F ; =?E F@ =J @ A?T "*+1f 2& 3<= P
C A?? =DD @E A F@ @CB @ = F@ =D = @4A1 I ?@ NGd '/=' = '=&& P
9 F@ I=?<C D F=E ?A <?AG @E>@ A1 F@ =EZ E = A? 1 / '4
G= C>@E F= F@ C >A ?>=G= J I@ =<@?? A I@ J@C@ A
=BA E DCA @ $ F@ Z C F=E ?A 1A ?E =? ? @? A? A E@1C= E
=1 @C <?AG @E>@ A1 F@ I=?<C D ' G= F@ E F= <?AG @E>@
G= ?A C@b C@E I F@ = @ $ 1 F@ ?A @ A CC@?E@C G=
E @CB@E =?E F@ I=?<C D E E ?A CC@?E@C D C =? A
F@ A11@? @ G= A J J @E G= ?A ?@ @ =C A E@ E@
GF@ F@C F@ GACE 7G F ? @? A E@1C= E H ?' @= - A AB@CCAE@
F@ @? C@ @ A?; 1AC F@ 1= A1 F@ E@1@?E=? F=B ?>=I A?E@E
G F F@ ? @? 1A ?E I F@ Z C G= b @ 11 @? A DCAB@
F@ ? @? A E@1C= E 1 3
F@ DC A?@C G= ?E @E A?? F@ -=?E 9 3 @ -8 B "/4 4 2 '' &2(
N?AG C@D@= @Ed 1AC 1C= E @? A I = ? ?>= >AAE G F ?' FC@@ +((+ ')/ ; / '4
J A? F I@1AC@ F@ 1 = a F@ 1 ?>= A1 F D@ A? F@ DC A?@C <' : /(] 'G .;
F=E 1 @E =' D@ A?' 1AC =CC=?>@ J @? ' G F F C@E AC ?E@C F@ 2& 49/ .G .H
A? CA A1 F@ A C ?E@C @ - A1 F@ = ?>F ?=I 14' 1' .MY' K72<:' 24 =<"P
A J @@ F @?>=>@ J @? =?E DC ?>DCA @ A? GF DCAD= "2(4 + '' : 14P
A F C@E AC G@C@ I@ ?>= CC @E ? A @11@ F DCADA = ?A ; / '4 : /(
I@ ?>= @? @E A I =' C@E AC =?E = @ I@ ?>= FAG? F@ A C =' GAH &2(
=EZ E>@E F@ D@ A?@C =' I=?<C D =?E =EZA C?@E F@ DCA @@E ?> 234+ ' ')
? A F@ D I A C ?E@C @ -- A1 F@ G= AIZ@ @E)22:= 49 ''
F= ?E@C @ -8 F@C@ J I@ =' D@ A?' 1AC =EZ E = A?A1 49(/ f ; 2 '49=
I=?<C D A DDAC F@ ?E J@? =?E F@C@ F@C@ G= ?A F 2& 49/ & * ') 2& 49/ "/4 4 2 '
D@ A? I =' D@ I?' 1AC =?=CC=?>@ J @? A =BA E I=?<C D !
=?E * =C ?= F@ E F= F@ AIZ@ A?' G= >AAE= 1! 3
F@ DC A?@C G= ?E @E ?E@C F@ -: , -8 3 @ : = -- ; < 8 89
N?AG C@D@= @Ed 1AC @>= D @E> ?>= @C = ?' G= F@ GF F F@ F=E)22:= 2 '' +"P
AI = ?@E A?' C@E G F ?' FC@@ J A? F ? @] I 1@1AC@ F@ 1 ?>A1 (2J+ = '24
F D@ A? F@ DC A?@C GCA @ A * H AF@?' A @?E F J 234+ ' '))22:=
AJ @ G= F@ A?=DDCAB= ?=E F@ @? F J 9 / GAC F =?E F@ 1(/ : 4
= <?AG @E>uE F@ C@ @ D A1 F@ J = E F@ GA E <@@D F@ J = =
=?E D= 1AC F@ J I I F * @ C AF@?' D@C@ J D AC
C@1 @E =?E F@ DC A?@C @?' I = < HH GAC F C@ = ? ?>= F@
C@ J = ?E@C =?E A11@C ?>I 1AC F@ J ; F A11@C G= C@1 @E =?E
* C AF@?' G@? A F@ DC A?@C A?' F@ . F A1 AI@C =?E F@
F@?' =>C@@E A D= 1AC F@ G= F@ . q ?' = F ?' I ZU=?E
F@ C@ ? ?' = F' = AA?' = F@ A E * C AF@?' GAC@ E ?
F= F@ G= F@ G@C@ A?' =DDCAB= A? ? ? F@ . F A1 AI@C;
I = =DD@=C@E F= F@ F=E ?' 1= I@@?? D @E>@E A?' F@
* =C ?= 7 F@?' F@C@ =?' @?E A1 F@ = @ F@ I=?<C D F=

1>3 &# # " ; 4 : # 8 # 5 # "
7 =% # ; 4 7 =
1 3 + : 9 6 + 153 + S " 8

F= ' C@DC@ @? = A?' B@? ' ' A ' J ' C@ J @ J I @C' F= ' F@' A? ' D@ 1 ' E C@ A?' > B!@?' A' F@' ICA<@C' G= ' A' >@ ' F@' <' = ' F@=D' = ' F@' A E ' "AG%' A' @ ' F@' E@= @C' <?AG' F= ' ' G= ' C@b C@E' 1AC' =' D=C =C' D CDA @' G= ' ?A ' F@' G= ' A' ?E @' F J ' A' AG@C' F ' DC @' F= ' ' J DAC =? ' ?' = @C = ? ?>' F@' ? @? A?' A1' F@' DC A?@C' G F' C@>=CE' A' F@' A C @' F@' ICA<@C' FA E' D C @ ' F@?%' 1' A ' F ?<' F@' C@DC@ @? = A?' A1' F@' ICA<@C' G= ' B C = ' F@' C@DC@ @? = A?' A1' F@' DC A?@C%' F@' ?@] ' b @ A?' G ' I@%' GF@ F@C' = ' F@' J @' F@' = FAC K@E' F@' ICA<@C' A' D C F= @%' F@' E E' ?A ' J @=?' A' J =<@' @' A1' F@' >AAE ' ?' F ' J =? 1= C@%' I ' ? @?E@E' A' >@ ' F@ J ' ? A' F ' DA @ A?' F= ' P @' J >F ' D @E>@' F@ J ' 1' F= ' G= ' F ' AIZ@ %' G@' F ?<' F@' = @' ' G F ?' F@' = @' ;' I ' F@?' F@' J ' F=B@' ? @?E@E' ?A ' A' @' F@' >AAE ' ?' F ' I ?@ ' = ' F@' B@C ' J A J @?' F@' >=B@' F@' E C@ A? ' A' F@' ICA<@C' ' A' F ' DA ? %' ' ' J DAC =? ' A' C@ J @ J I @C' F= ' F@ ' G@C@' D @E>@E' G F ?' P1A' E= ' A1' F@ C' C@ @ D %' =?E' 1AC' =' J' B@C ' A? E@C=I ' I@ AG' F@ C' B= @' I =? = %' F@?%' E E' F@' DC A?@C' = FAC K@' F@' = @ J @? ' J =E@' I ' F@' ICA<@C' A' ACE= %' F= ' F@' G=? @E' F@' >AAE ' A' @ J D A ' F@ J ' ?' F ' I ?@ ';' =?E%' 1' A%' E E' F@%' = ' F@' J @' F@' >=B@' F@' ACE@C%' ' ? @?E' A F@CG @' A' E DA @' A1' F@ J ' , ' 183

DA?' =?' ?E J @? ' A?' 8' @A ' -%' ' ' N?AG' C@D@= @Ed%' b = 1 @E' J :/ '1/

I ' ' @A ' :%' ' 8%' ' %' =>= ? ' =' I=?<C D ' 1AC' A? @= ?>' F ' @11@ %' GF@C@' F@' @B E@? @' G= ' F= ' F@' DC A?@C%' A?' F ' = ' @]T =J ?= A?%' = @E' F= ' =' IAA<' > B@?' ?' I ' F J ' A? = ?@E' =?%'= A ?' A1' = ' F ' @11@ %' ' G= ' FA E@?' A' I@' ? J I@? ' A?' F@' DCA @ AC' A' DCAE @' F@' IAA<%' AC'% A' = A ?' 1AC' ' ?A? DCAE A?%' 163

?' F@' =J @' = @' ' G= ' F@ E' = ' F@' C = ' F= ' ' G= ' ?A ' ?@ @ T 2'1/+* ; /'4
=C ' F= ' F@' >AAE ' FA E' I@' A? @= @E' I ' F@' DC A?@C' F J @ 1%' 3# + '' +)/'4
AC' F= ' F@' FA E' F=B@' F=E' F@' DA @ A?' A1' F@ J ' =1 @C' F@' I=?<T C D ';' I ' F= ' ' G= ' 11 @?' 1' =?A F@C' D@C A?' F=E' F@ J ' = ' F@' =>@? ' A1' =?E' IZ@ ' A' F@' A? CA ' A1' F@' DC A?@C%' =?E' F=E' =<@?' F@ J ' I ' F@' E C@ A?%' =?E' G F' F@' DC B ' =?E' <?AG @E>@' A1' F@' DC A?@C%' A' FD' D = @' GF@C@' F@ ' G@C@' E@DA @E%' NFd

?' F@' =J @' = @' ' G= ' = A' F@ E' = ' F@' C = ' F= ' F@' ?E T J @? ' J >F ' I@' DC@1@CC@E' ?' * EE @ @]%' 1' F@' DCA @ AC' A E' DCAB@' =?' = = ' A? @= J @? ' F@C@';' = FA >F' F@' = ' @]=J ?= A?' A1' F@' I=?<C D ' AA<' D = @' ?' A?EA?%' 1 3

?' ?E J @? ' A?' F@' -' ,' ' 3 @ ' ' %' ' -8 ' N?AG' C@D@= @Ed%' (22& 2& 4* f
=>= ? ' =' I=?<C D ' 1AC' @J I@KK ?>' D=C ' A1' F ' D@C A?= ' @ = @%' :/1*+(+4 2 '' 2&
= @>@E' F@' = ' A1' I=?<C D ' A' F=B@' I@@?' AJ J @E' I ' I@ ?>' '=2*J/ '1#'
?=I @' A' J @@ ' F ' @?>=>@ J @? ' G F' F ' C@E AC %' =?E' Q '1 ?>' "/4 4 2 ' ' +' ;'
F ' D@ A?' 1AC' =EZ E = A?' ' AD ' A1' =' E@ =C= A?' A1' ? A B@? ' 4 ; f 2& & * ')'
?' F@' 1AC J' ?' F@' F@E @' A' F@' %' =?E' @C 1 @E' A' I@' =' C @' 49/(/2&
AD ' I ' F@' C@> C=C%' =?E' ?E@C' F@' @=' A1' F@' A C %' G=' D ' ?%'
=?E' = A' F@' AC > ?=' D@ A?' A1' F@' I=?<C D %' ?E@C' F@' @=' A1'
F@' A C %' =?E' IA F' IAC@' E= @' F@' =J @' E= ' F@' @C<' A1' F@'
= @ ?>' G ?@ ' DCAB@E' F= ' F@' =G' F@' DC A?@C' >?' IA F' F@'
D@ A?' =?E' E@ =C= A?%' =?E' =G' F J ' @=B@' F@' E@ =C= A?' = ' F@'
A C ' F@' =J @' E= ' F@' C@> C=C' DCAB@E' F= ' F@' E@ =C= A?'
G= ' E@ B@C@E' ? A' F ' F=?E ' 1AC' F@' D CDA @' A1' 1 ?>' I@1AC@' z

183' 2 ' 3 ' G 4 ' ' 8 ' ' ' - Wxt' b :' "/(44*/ :+*/ ' '
0 1' G 8' ! ' 37 ' G ' ,' / ' ' - ' G W1t' 3 :' "/(44*/ :+*2 '
5-

AH A <‘ ?‘ F@‘ JAC? ?>‘;‘ F@‘ A E‘?A‘C@J@JI@C‘=? F ?>‘I ‘ ?E@T D@?E@?‘ J@JAC ‘=‘ A‘ F ‘ D@ A?‘I ‘ F ‘ >@?@C=‘ DC= @‘ G=‘ A‘ @@‘ F=‘ F@‘E@ =C= A?‘G=‘ 1 @E‘ I@1AC@‘ C@ @ B ?>‘ F@‘D@ A?‘ 1A ?E@E‘A?‘ ‘ ‘G=‘ C>@E‘ F=‘ @C@‘G=‘?A‘ @>=‘DCAA1‘ F=‘ F@‘E@ =C= A?‘G=‘1 @E‘I@1AC@‘ F@‘D@ A?‘=?E‘ F=‘ F@‘= @ ?>‘ G ?@ ‘A >F‘ A‘F=B@‘I@@?‘ = @E‘;‘ I ‘ C=JG@ ‘ ‘ @1‘ F@‘ = @‘ A‘ F@‘Z C ‘=?E‘C@ @CB@E‘ F@‘DA ? ‘1#3

‘ ‘:2(= ‘ </‘4 2‘‘+ "p4 4 2‘‘ =‘ ‘2‘ /J :/‘1/‘ 2‘ 49/‘ 4 ; /‘ 79/‘‘ 4‘ 7+=‘ &*/:

?‘ =‘ = @‘ I@1AC@‘ F@‘ #@I AC H ‘ 9 ‘ ?‘ ACE@C‘ A‘DCAB@‘ F@‘ J@‘ GF@?‘ =?‘ = ‘ A1‘ I=?<C D ‘FDE‘ I@@?‘ AJJ @E‘I ‘1 ?>‘ =‘D@ A?‘ ?‘ F@‘ ? A B@?‘ A C‘=‘ AD ‘A1‘ F@‘D@ A?‘D CDAC T ?>‘ A‘I@‘ >?@E‘I ‘ F@‘A11 @C‘ ?‘GFA @‘ AE ‘ F@‘D@ A?‘G= ‘1 3 G=‘D ‘ ?‘=?E‘ F@‘A? ‘DCAA1‘A1‘ F@‘ J@‘ A1‘1 ?>‘ F ‘D@ A?‘ G=‘ F@‘ ?EAC @J@?‘A?‘ F@‘I=<‘A1‘ F@‘D@ A?‘A1‘ F@‘ J@‘A1‘ F@‘ 1 ?>‘ F@‘D@ A?‘=?E‘ F@‘A? ‘ >?= C@‘A1‘ F@‘A11 @C‘G=‘ ?‘ F@‘ ??@C‘1A E‘A1‘ F@‘D=D@C‘;‘ ‘G=‘F@ E‘ ?‘=‘ = @‘C@ @CB@E‘ F=‘ F ‘ G=‘ ? 11 @?‘;‘ 1AC‘ F@‘ ?EA ! @J@?‘ A1‘ F@‘D@ A?‘G=‘?A‘D=C‘ A1‘ F@‘D@ A?‘ @1‘=?E‘G=‘?A‘J=E@‘@B E@? @‘I ‘ F@‘ ‘NMd

+(2‘ /J :/‘1/‘ 2‘ 79+‘ 49/‘ 3+‘0(<"‘ =+#=‘ +‘ 9 =‘ /V+ ; ‘ ‘ +4 1'

?‘=‘ = @‘I@1AC@‘ F@‘ #@I AC H ‘ 9 ‘ ‘G=‘F@ E‘ F=‘ D=CA‘ @B E@? @‘ A1‘=? F ?>‘=‘ I=?< ! D‘ = E‘ = ‘ F@‘ J@‘ 1‘F ‘ = ‘ @]=J ?= A?‘ A E‘I@‘C@ @ B@E‘= FA >F‘ ‘=DD@=C@E‘ F=‘?A‘D=C‘ A1‘GF=‘F@‘ = E‘G=‘ =<@?‘EAG?‘ ?‘GC ?> ‘ F< ‘D=D@C‘D CT DAC ?>‘A‘I@‘F@‘1?=‘@]=J ?= A?‘E E‘FA ‘ A?=?‘=? ‘b @ A?‘ AC‘=? G@C‘;‘ ‘J@C@ ‘ = @E‘ F=‘ F@‘ AJJ A?@C‘?A‘I@ ?>‘ = 1@E‘ G F‘ F@‘ =? G@C‘ A1‘ F@‘ I=?<C D ‘=EZAC?J@E‘ F@‘ @]=J ?= A?‘ ! ‘#! ‘;‘ =?E‘ ‘G=‘DCADA @E‘ A‘>B@‘D=CA‘@B E@? @‘ A1‘GF=‘ F@‘I=?<C D ‘ = E‘I@1AC@‘ F@‘ AJJ A?@C‘GF F‘ ‘G=‘ A? @?E@E‘J >F‘I@‘EA?@‘=‘ ‘G=‘ F@G?‘ F=‘GF=‘ F@‘I=?<C D ‘ = E‘ G=‘?A‘ =<@?‘EAG?‘ =?E‘I@ E@‘ I ‘ @ ‘ 9 ‘ F@‘ AJJ T A?@C‘ =C@‘ @JDAG@C@E‘ A‘ @]=J ?@‘ I ‘ D=CA‘;‘ 5=C<‘ ‘ ‘ ‘7‘ ‘ =?‘ C@ @ B@‘?A‘ @B E@? @‘A1‘ F@‘@]=J ?= A?‘I ‘ F@‘GC ?>‘ F@‘ @]=J ?= A?‘ ‘C@b C@E‘ A‘I@‘ ?‘GC ?>‘I ‘ F@‘ ‘A1‘5=C =T J@?‘;‘ =?E‘ F=‘ D=C‘GF F‘C@ = @‘ A‘ F@‘@]=J ? ?>‘I ‘D=CA‘ =DD @‘A? ‘ A‘ F@‘b @ A?‘GF F‘J = I@‘@ F@C‘D ‘I ‘D=CA‘AC‘ I ‘GC @?‘ ? @CCA>= AC @ H123‘ n04‘ GF@C@‘ =?‘ ?E J@?‘ = @>@E‘ F=‘ =1 @C‘ F@‘@]=J ?= A?‘A1‘ F@‘ I=?<C D ‘ =?E‘ =1 @C‘ F@‘F=E‘ I C I@E‘ F@‘ =J@‘ =‘b @ A?‘G=‘D ‘ A‘ F@‘ I=?<C D ‘ =?E‘ ‘G=‘ AIZ@ @E‘ A‘ =? ‘ @B E@? @‘ I@ ?>‘ >B@?‘A1‘b @ A? ‘ =?E‘ =? G!@C ‘GF F‘G@C@‘ ?A‘C@E @E‘ A‘GC ?>‘;‘ ‘G=‘C@D @E‘F=‘ F@‘J = @C = ‘ =? G@C‘ = A?@‘ G@C@‘D=<@?‘EAG?‘;‘ =?E‘ ‘ AJ@ J@‘ F=DD@?@E‘ F=‘ =? G@C! ‘GF F‘ = ‘ F@‘ J@‘ @@J@E‘ J J = @C = ‘ =1 @CT G=CE ‘ I@ =J@‘ J = @C = ‘ F@‘ =? G@C‘ DCADA @E‘ A‘ I@‘ > B@?‘ ?‘ @B E@? @‘G@C@‘ > B@?‘ =1 @C‘ F@‘ @]=J ?= A?‘F=E‘ A? E@E‘ ?‘ F@‘ 1 C ‘ ? =? @‘ I ‘ F@ ‘= A‘G@C@‘C@E @E‘ A‘GC ?>‘ & =J ‘ ‘ T ‘ =??A‘C@ @ B@‘ D=CA‘@B E@? @‘A1‘=? ‘=? G@C ! A‘b @ A? ‘ F= ‘ G@C@‘D ‘ A‘ F@‘ I=?<C D ‘ I@1AC@‘ F@‘ AJJ A?@C‘ I C I@E‘ F@ C‘?=J @ ‘ A‘ F@‘@]=J ?= A? ‘ J ‘DC@ J@‘ F=‘ = ‘ F@‘ =? G@C‘ DC AC‘ F@C@ A‘ F=‘ G@C@‘ J=@C =F‘G@C@‘ =<@? ‘EAG?‘ =?E‘ ? E@E‘ ?‘YF@‘ @]=J ?= A?‘ I@1AC@‘ F@ C‘ >?= C@ ‘G@C@‘ =11]@E‘ A‘ ‘ ‘=? G@C ‘A‘b @ A? ‘D ‘ I @b @? ‘ A‘ F‘@]=J T ?= A?‘ J= ‘ I@‘> B@?‘ ?‘@B E@? @ H NRXd

1#3‘ I ‘ ,‘ / 4‘ ‘ ,‘ ‘ ‘F< ‘ ‘" ‘ ‘ ‘ # ‘ @ ‘6 ! ‘ 0U1‘ I ‘7‘ ‘6 ‘-‘ ‘ 5‘ ‘ - ?‘,‘ ! ‘ ‘ ‘ ,‘S‘ ‘ 0U0f I ‘,‘ I =J ‘ ‘ "‘ 5 1 3‘0 ‘ ‘ ,‘>2‘ ! ‘ ‘ - ‘(‘ -

A' C@?E@C' =?' @] = J ?= A?' A1' =' I = ?<C D ' C@E @E' ? A' GC ?>' ?E@C' -' , ' ' 3 @ ' ' ' ' .' N?AG' C@D@= @Ed% =E J I @' ?' @B E@? @' = ' =' E@DA A?' ?E@C' F@' @= ' A1' F@' A C % D C =? ' A' -:' , ' -8' 3 @ ' ' :% ' - ' N?AG' C@D@= @Ed% ' CA ' =DD@=C' F= ' F ' =? G@C ' =1 @C' F@ ' G@C@' C@E @E' ? A' GC ?>' G@C@' >?@E' =?E' I C I @E' I ' F@' I = ?<C D % 1!3

?' =?' ?E J @? ' ?E@C' F@' ' , ' 3 @ ' ' - - % ' -' N?AG' C@T D@= @Ed% ' =>= ? ' =' I = ?<C D ' 1AC' ?A ' CC@?E@C ?>% F@' =EZ E T = A?' A1' F@' DC A?@C' I @ ?>' =' I = ?<C D % ' D I = A?' ?' F@' Y68 ' F@' =DDA ? J @? ' A1' F@' GA' E= ' 1AC' CC@?E@C ?>' =?E' 1 ? F ?>' F ' @] = J ?= A?% =?E' F= ' F@' I = ?<C D ' E E' ?A ' I J ' F J @ 1' A' I@' @] = J ?@E' A?' F@' @ A?E' E= % G@C@' = ' F= ' G@P' DCAB@E ' ' G= ' A? @?E@E' F= % FA >F' @ ' - :' = E' F= ' F@' Y68 ' FA E' F@' @B E@? @' 7 ?' = ' = @ %H @ ' F@ @' GA !E ' G@C@' A? CA @E' I ' F@' GACE ' F= ' 1A AG@E' F@ J % =?E' =DD @E' A? ' A' B ' = @ ' ' ' G= ' F@ E' F= ' F@' Y68 ' G= ' =E J I @ ' 5A T A <% ' % = E' 7o3' 7 ' F= ' I @@?' A? @?E@E' F= ' F@' GACE ' [' ?' = ' = @ ' n' =C@' J @E' I ' FA @' F= ' 1A AG% =?E' EA' ?A ' ? E@' C J ?= ' = @ ' ;' =?E' 1' ' 1A ?E' F@' D@?= ' = @ ' ?' A?@' = @% =?E' FA @' GF F' J @C@ ' C@ = @E' A' F@' I = ?<C D ' ?' =?A F@C% ' J >F ' I @' E DA @E' A' F ?<' F= ' =' C@= A?=I @' A? C A?I ' FA @' GFA' 1C= J @E' F ' ' @=C ' F=E' F@' C J ?= ' DCA @E C@' ?' B @G% =?E' ' F ?<% F@C@1AC@% GF@?' F@ ' = ' = ' @= @ % F@ ' J @=?' C J ?= ' = ' G@ ' = ' B H NCAd

' ' G= ' = A' F@ E' F= ' I @1AC@' F@' Y68 ' G= ' =E J @E' ?' @B E@? @' ' G= ' ?@ @ =C ' A' DCAB@' F= ' F@' I = ?<C D ' F=E' ?A ' =<@?' =? ' A1' F@' @D '' J @? A?@E' ?' F@' @ A?' A' E D @' F@' I = ?<C D % 7 3' ' ' G= ' F@ E' F= ' F@' DCAE A?' I ' F@' C@> C=C' A1' F@' A C ' A1' =?<C D ' A1' F@' IAA< ' A? = ? ?>' F@' DCA @@E ?> ' ?' F@' I = ?<C D % GF F' A? = ?@E' ?A' C@1@C@? @' A' =? ' F' DCA @@E ?>' I ' F@' I = ?<C D % A>@ F@C' G F' @B E@? @' I ' F@' A AC' A' F@' 1 = ' F= ' F@' F=E' ?@B@C' F@=CE% A1' =? ' DCA @@E ?>' F=B ?>' I @ ?>' =<@?' A' E D @' F@' 1 = % G= ' 11 @?' DCAA1' A' J = <@' F@' Y68 ' =E J I @% NAd' 4

?' =?' ?E J @? H=>= ? ' =' I = ?<C D ' 1AC' ?A ' E AB@C ?>' GF@?' F@' E DA @E' A1' =?' @ = @% =?E' =>= ? ' @B@C= ' A F@C ' 1AC' = E ?>' =?E' = ?>' F J % ' G= ' F@ E' F= ' ?E@C' F@' 8 ,' ' 3 @ ' ' - - % ' -:' N?AG' C@D@= @Ed% F@' Y68 ' G= ' A? ' @B E@? @' =>= ? ' F@' I = ?<T C D ' N d

' @@ J ' F= ' F@' DCAE A?' A1' F@' Y68 ' G ' I @' 11 @?' G FA ' DCAA1' A1' ' I @ ?>' I A >F ' A1' F@' Y68 ' DC ? @C% AC' GF@C@' ' A J @ ' 1CA J % ND d

& F@C@' =' I = ?<C D ' F=E' A J J @E' =?' A11@? @' =>= ? ' F@' -' , ' ' 3 @ ' ' % ' -8 ' N?AG' C@D@= @Ed% I ' ?A ' CC@?E@C ?>% =?E' =?' ?1AC J = A?' F=E' I @@?' = E' I @1AC@' =' J => C= @' GFA' F=E' @E' =' G=CC=? ' 1AC' F ' =DDC@F@? A?% =?E' F@' -:' , ' -8' 3 @ ' ' :% 4(/ :

" B' ' , ' /+' ' .' 2V' ' ' GYY
W b' =' 42' 49/' > V ' '27' 3/ ')' /J '
: / '1/' =// ' .' "' I IY' ' K
RCB &4/(' '4 ' +4 ')' +' =4(2')' 2" ' 2 ''
49+4' 49/' + : 6 < : 1+4 2 '' 4=/*&' 7+=' =<&& 1 / '4
/J : / '1/' 2 '' 49 =' ' : 14 ; / '4' 79 19' 9+=
= '1/' 3// '' 2J/((<*/ : ' '' /)' &' +' :=' .' "' IYM
) * /)' , ' *42 ' ' G' 2V ' 'H-.E

(/==7/**' ' 12 '1<(((/ : ' /)' &' +**'
2=12/' (' J' GEE' <4' =/' ' &'
#2 ' =' N ' 2V' ' ' GNN
" B' /)' , ' +((=' I' 2V' ' ' . IM'
*+44' ' +' :' 2*4 '+' '
" B' /) ' +((='
% B' /V' , ' L2(=#49' ' ' ' GDI' //'
J2*' H' /& ' ' &' +<: ' 4a' ..'
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: -! 8 '/ VV ' ' / ' 5 L : .' 12 3' .<R

=1 @CG=CE ' =J@' ? A' AD@C= A?% GF ' I ' @ ' - ' C@D@= ' I@' -' ,' ' 3 @ ' ' % ' -8 %' @] @D ' = ' A' !' =? ' DCA @@E ?>' D@?ET ?>'H AC' 7=? ' D@?= ' ? CC@E'H ?' C@ D@ ' A1' 7=? ' C=? = A?% , % EA?@' AC' @] ?>'H DC AC' ' F@' AJ J@? @J@?' A1' F@' %' =?E' F@' I=?<C D ' G= ' =1 @CG=CE ' A?B @E' ?E@C' F@' 1AC J@C % ' G= ' F@ E' F= ' F@C@' G= ' =' DCA @@E ?>' D@?E ?>% ' =?E' F= ' F@' GACE !' D@?= 'H@] @?E@E' A' =? ' D@?= ' A? @b @? @ ' GF= @B@C% =?E' G= ' ?A ' A?1 ?@E' A' =' D@ ? =C ' D@?= 'A? % ' =?E' A? @b @? ' F@' A?B A?' G= ' >AAE ' N' d% '

9/(/' +'' ' : 14 ; / ' 4' &2(' *+(1/ '# ; +# 3/' ; + ' 4+ ' / :' +)+ ' =4' +' 3+ ' 0P (<"4

& F@C@' =' I=?<C D ' F=E' C@ J AB@E' @C = ?' A1' F ' >AAE % = ' ' G= ' = @>@E% G F' ? @? ' A' E@1C= E' F ' C@E AC ' $ 5=C<@% % F@ E' F= ' 1' F@' >AAE ' F=E' ?A ' I@@?' =<@?' DA @ A?' A1' 1C ' F@' = >?@@ ' AC' F@' J @ @?>@C% F@' ?E J @? ' J ' I@' ?E@C' F@' ' @A' : % ' % ' -' N?AG' C@D@= @Ed;' I ' F= ' 1' F@' = >?@@ ' AC' J @ @?>@C' F=E' = = ' =<@?' DA @ A?' A1' F@' >AAE % =?E' F@ ' G@C@' =1 @CG=CE ' C@ J AB@E' I ' F@' I=?<C D '' =?' ?E J @? ' 1AC' =C @? ' J >F ' I@' T = ?@E';' ?' F' = @% FAG@B@C% F@' C=E ?>% D@ A? ?>' C@E ACH ' E@I % = ' A1' I=?<C D % , % J ' I@' C@> =C ' DCAB@E';' =?E' @B@?' F@?% 1' F@' I=?<C D ' J @=? ' :4 #'*!# ' A' E D @' F@' I=?<C D % F= ' GA E' DC@B@?' F@' =< ?>' 1CA J ' I@ ?>' =' 1@ A? % NCd

+' 0(<"4$=' 7 &/' '12 ; P "/4/ '4' +=' +' 7 4' /==

' G= ' =>C@@E' F= ' =' I=?<C D H ' G 1@' A E' ?A ' I@' @] =J ?@E' A?' F@' D=C ' A1' F@' DCA @ A?% A?' =?' ?E J@?' =>= ? ' F@' I=?<C D ' 1AC' A11@? @ ' =>= ? ' F@' 8' @A' -% % ' N?AG' C@D@= @Ed% N d

B' /) ' ' ; 49' ' ' ' .H. W(B' /) ' ' +((=' 2' ; 2<49' "(' ==' .EI I' ' ! R B' .' +70' ' 'M' IN' '^ & S P' # : 5.' =/1' I' /0' ' + ; /=' .' ' '=' Y.M' 79/(/' 49/' 2(9+' /**&&*m' =+ :' 49+4' +' 7 &/' 12<*:' '2' 3# 49/' 12 ; P ; 2 '' *+7' 3/' +' 7 4' /==' &2(' 2(' +)+ '=4' 9/(' 9<=3+' :? +' :' 49+4' 492<)9' +' &2(; /(

=4+4<4/' G.' +2' . ' +<492(=/ :' 49/' 12 ; P ; == 2' /(=' 42' /V+ ; ' /' 49/' 7 &/' 42<19 ')' +' # 12' 1/+* ; / ' 4=' 2& 49/')22 :=' /&&/14=' 2(' /=4+4/' 2& 49/' 3+' 0(<"4' #/4' 4' : :' ' 24' /V4/' :' 42' /V+ ; ' ')' 49/' 3+' 0(<"4$=' 7 &/' 42<19 ')' 9 =' 3+' 0' "4/#' 2(' 79/49/(' 9/' 9+ :' 12 ; ; 44/ :' +' # +14' 2& 3+' 0(<"41#' +' :' 927' 2(' 79/ '' 9/' 3/1+ ; /' +' 3+' 0(<"4

IYH

?E J @? ‰ F' A1' F@' = E' D@C A? ' = ' F= ' F@' DCAB@E' A' F=B@' C@T @ B@E' =? ' D=C ' 4"' * & ! ' A1' F' DCAD@C Ĥ 123
@ ' 8 ' 7 & FA A@B@C' F= ' C@ @ B@' =? ' F= @ ‰ JA C@ ‰ B= =I @' @ C ‰ AC' A F@C' DCAD@C ' GF= A@B@C‰ F@' @= ?>‰ =< ?>‰ AI = ?T ?>‰ A?B@C ?>‰ AC' E DA ?>' GF@C@A1' ' ' J=E@' =' J E@ J @=?AC' I ' F ' ‰ <?AG ?>' F@' = J @' A' F=B@' I@@?' ? =G1 ' A @?‰ =<@?‰ AI = ?@E‰ A?B@C @E' AC' E DA @E' A1‰ F= ' I@' > ' A1' =' J E@T J @=?AC‰ =?E' J = ' I@' ?E @E' =?E' A?B @E' F@C@A1‰ * !F@ FAC' F@' ' D@C A?' > ' A1' F@' DC ? D= ' J E@ J @=?AC' F= ' AC' F= ' ?A ' F=B@' I@@?' DC@B A ' A?B @E! F@C@A1‰ AC' F= ' AC' F= Z' ?A ' I@' = J @?=I @' A' Z @' ; =?E' @B@C ' F' C@ @ B@C‰ I@ ?>' A?B @E' F@C@A1‰ F= ' I@' =I @‰ = ' F@' E C@ A?' A1' F@' A C ‰ A' I@' <@D ?' D@?= ' @CB T E@' 1AC' =? ' @C J ' ?A ' @] @@E ?>' @B@?' @=C ' =?E' ?A ' @ ' F=?' FC@@' @=C ‰ I!d ` AC' A' I@' J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' @=C ‰ G F' AC' G FA ' F=CE' = IA C' =?E' G F' AC' G FA ' A =C ' A?1 ?@ J @? ‰ =?E‰ 1'=' A= @' ?E@C' F@' =>@' A1'] @@?' @=C ‰ G F' AC' G FA ' GF DD ?> Ĥ N d
@ ' ' 7 & FA A@B@C' F= ' C@ @ B@' =? ' F= @ ‰ JA?@ ‰ B= =I @' @ C ‰ AC' A F@C' DCAD@C ' GF= A@B@C‰ <?AG ?>' F@' = J @' A' F=B@' I@@?' 1@ A? A ‰ AC' ? =G1 ' A @?‰ =<@?‰ AI = ?@E‰ A?B@C @E‰ 4"' #! E4 #' 4*' J = ‰ GF@ F@C' F=C>@E' = ' =?' = @ A '=1 @C' F@' 1= ' A' F@' 1@ A? ‰ AC' G F' =' I =? B@' 1@ A? ‰ AC' G F' =' J E@ J @=?AC' A? ‰ I@' E@= ' G F‰ ?E @E‰ C @E‰ =?E' D ? F@E' ?' =? ' A ? ' AC' D = @' ?' GF F' F@' F= ' F=B@' AC' F= ' F=B@' F=E' =? ' F' DCAD@C ' ?' F ' DA @ A?‰ AC' =' =? ' A ? ' AC ' D = @' ?' GF F' F@' D=C ' > ' A1' F@' DC ? D= ' 1@ A? ' AC' J E@ J @=?AC' J = ' I ' =G' I@' C @E‰ ?' F@' = J @' J =??@C' = ' F' C@ @ B@C' J = ' I@' E@= ' G F‰ ?E @E‰ C @E‰ =?E' D ? F@E' ?' F@' A ? ' AC' D = @' GF@C@' F@' = = ' C@ @ B@E' F' DCAD@C Ĥ 7*3
@ ' . ' 7 & F@C@' F@' @= ?>' AC' =< ?>' A1' =? ' DCAD@C ' GF= AT @B@C' ' I ' F ' ' D ? F=I @' A?' J J =C ' A?B A?‰ @ F@C' 1AC' @B@C ' A11@ C @‰ AC' 1AC' F@' 1 C ' =?E' @ A?E' A11@? @' A? ‰ AC4 1AC' F@' 1 C ' A11@? @' A? ‰ =? ' D@C A?' GFAU" F= ' C@ @ B@' =? ' F' DCAD@C ‰ <?AG ?>' F@' = J @' A' I@' ? =G1 ' AJ @' I ‰ F= ‰ A?' ?B A?' F@C@A1' I@1AC@' =' Z @' A1' F@' D@= @‰ I@' =I @‰ 1AC' @B@C ' 1 C ‰ @ A?E‰ AC' I @b @? ' A11@? @' A1' C@ @ B ?>‰ A' F@' = J @!1AC1@ C@' =?E' D ? F J @? ' A' GF F' =' D@C A?' > ' A1' =' 1 C ‰ @ A?E‰ AC' IT @b @? ' A11@? @' A1' @= ?>' AC' =< ?>' F' DCAD@C ' ' I ' F ' ' J =E@' =I @ H
@ ' :‰ =1 @C' DCAB E ?> ' 1AC' F@' C = ' A1' =? ' D@? A?' GFA' F= ' F=B@' ?' F ' DA @ A?' ?' =? ' A?@' D=C ' A1' F@' ? @E' 6 ?>EA J ' =? ' DCAD@C ' GF F' F@' F= ' F=B@' A @?' ?' =? ' A F@C' D=C ' A1' F@' ? @E' 6 ?>EA J‰ @?= F= ‰ 7 1' =? ' D@C A?' ?' =? ' A?@' D=C ' A1' F@' ? @E' 6 ?>EA J ' F= ' C@ @ B@' AC' F=B@' =? ' F= @ ‰ JA?@ ‰ B= =I @' @ C v!' AC' A F@C' DCAD@C ' CB = A@B@C' GF F' F= ' F=B@

1*Ø 9 =' : + ' =/' =' 4+0/ '" &(2 ;' 49/' ' ' .A' /4' 1' . MM' =' ' /&2(/' 49 =' 14' &' =/J/(+* "/ =2 '=' 7/(/' 19+()/ :' 62 '4*#' 7 49' (/1/ J ')' =42*/ '")22 : =' +62 '4' +14' 2& (/1/ J ')' ; <=4' 9+J/' 3// '", "(2J/ ; ' /' /V' . '*+== <)9+ ; ' ' ' ' ' ' ' ' GAD' /)' ' ! (+#' G /' ' ' M ' EY' ' ' /)' ' +449/7 =' :' /' ' M ' ' ANY
7<3 24' */ ==' 49+'" & J/' #/+(=' &' 49/' 3 '

2&&/ '1/' 7+=' 12 ; ; 44/ :' +&4/(' 49/' GA49' 2& <*#' . EY . ' /' J2*' . ' "' DH
R B' 9 =' 1*+<=/' =' 4+0/ '" &(2 ;' 49/' D' ' E' ! /2' . ' ' GN' =' AA' ? N ! /2' ' 1' AA' =' . E' W D' ? +' :' GM' ' G.' /4' 1' -) :' ' N' =' 42' 9+(:' *+32<(' 1 ' =/' "' Y . ' J2*' . ' "" ' EM' E.
 # b' 9 =' 1+<=/' =' 4+0/ '" &(2 ;' 49/' D' ' E' ! /2' I' 1' GN' =' AY' +' :' N' ! /2' I' 1' AA' =' IN

/1/ J/(' 79/(/' 4(+3*/

/1/ J/(=' 2& "(2"/(4# 79/(/' 49/' 2(P) '+* 2&&/ '1/' =' "<' =9+3*/' 2 '" =< ; ;+(# 12 'P J 14 2'

/1/ J/(=' 2& "(2"/(4# '" 2' /' "+(4 2& 49/' ' 4/ :' ')P :2 ;' 79 19' 9+=' 3//'" =42*/'" ;' +' # 249/("+(4 2& 49/

' 4/ :' ')P :2 ;' ; +# 3/ 4(/ :' '' 49+4 "+(4 79/((' 49/# 9+J/' 49/' "(2"/(#

I @@?' A @?' AC' A F@CG @' 1@ A? A =<@?' ?' =? ' A F@C' D=C ' A1' F@' ? @E' 6 ?>EA J %' F' D@C A?' <?AG 1 >' F' DCAD@C ' A' F=B@' I@@?' A @?' AC' A F@CG @' 1@ A? A =<@?%!F@' J = ' I @' E@= ' G F% ?;' E @ @E%' C @E%' =?E' D ? F@E' 1AC' F' A11@? @' ?' F= ' D=C ' A1' F@' ? @E' 6 ?>EA J ' GF@C@' F@' F= ' A' C@ @ B@' AC' F=B@' F' DCAD@C %' ?' F@' =J @' J =??@C' = ' 1' ' F=E' I@@?' AC > ?= ' A @?' AC' =<@?' ?%' F= ' D=C H NWd

(:/(' 79/ '' +' "+7 '3(20/(' =' 12 'J 14/ :

' ' ' ' 3 @ ' ' %' ' 9%' 1' =' D=G ? I CA<@C' ' A?B @E' A?' ?E J @? ' A1' =? ' 1C= E' ?' F ' I '@ %' AC' A1' C@ @ B ?>' A @?' >AAE ' <?AG ?>' F@ J ' A' I @' A @?%' F@' A C ' I @1AC@' GF F' F@' ' A?T B @E' J = %' 1' ' F ?< ' 1 %' E C@ ' F= ' F ' @? @' F= ' @= @' A' F=B@' @11@ %' =?E' F@' =J @' F= ' A' @= @' = ACE ?>

'& ((&

;! ' U 6 & ' 6E* '

p1/ J ')' =42*/ '')22 :=' = ' 12 ; ; 2'' *+7

F@' I =C@' C@ @ B ?>' A1' A @?' >AAE %' <?AG ?>' F@ J ' A' I@' A @?%' E E' ?A ' J =<@' =?' = @ AC ' = ' AJ J A?' =G ' ' 1' =' D=C ' C@T @ B@E' >AAE ' 1CA J ' F@' F @1' A' <@@D' 1AC' F J %' <?AG ?>' F@ J ' A' F=B@' I@@?' A @?%' AC' 1' F@' C@ @ B@E' >AAE ' A' 1= = @' F@' @ =D@' A1' F@' F @1%' AC' 1' F@' <?AG ?> ' C@ @ B@E' F@ J ' DA?' =?' =>C@@ J @?' ' A' 1 J ' ? F' F@' F @1' G F' DD @ ' A ' A1' F@ J %' =?E' = ACE ?> ' DD @E' F J %' F ' J =E@' F@' D=C ' =?' = @ AC ' = ' AJ J A?' =G%' 1AC' ' G= ' C@ @B ?>' =?E' AJ 1AC ?> U' N/d %

' : /(' 49/ =4+4<4/

1' F@' DC A?@C' C@ @ B@' F@' DCAD@C ' <?AG ?>' ' A' I@' A @?' 1AC' F@' D CDA @' A1' = ?>' F@' F @1%' AC' 1AC' F@' D CDA @' A1' A? @= T J @? %' ' =' C@ @ B ?>' G F ?' F@' = @%' = FA >F' F@' ?@ F@C' >= ? ' =? ' DCA1 ' AC' =EB=? =>@' I ' F@' C@ @ D %' NJ d

' G ' I@' AI @CB@E' F= ' F@' DC@ @?' ' = @' ? E@ ' = ' = @ ' GF@C@' DCAD@C ' F= ' I @@?' 1@ A? A ' @] AC @E%' AI = ?@E%' @ J I @KK @E%' AC' A F@CG @' E DA @E' A1' G F ?' F@' J @=? ?>' A1' =? ' @ A?' A1' F@' ' N @@' 6 ' D' : %' =?E' @@' ' 8%' 6 ' D' : 8%' GF@C@' DC ? D= ' > ' A1' ' J E@ J @=?ACd%' NAd

/1/ J ')')22 :=' 12 'P J/(4/ :' 3# +' 3+ */ //

' J = ' I @' G@ ' A' AI @CB@' F= %' = FA >F' 1AC J @C ' =' D@C A?' A E' ?A ' I @' A?B @E' = ' =' C@ @ B@C' A1' A @?' >AAE ' GF@C@' F@' >AAE ' F=E' I @@?' A?B@C @E' I ' =' I = @@' ?' F' =' J =??@C' = ' ?A ' A' = J A ?' A' =C @? %' 1*3' @ ' ?E@C' F@' DC@ @?' %' 3F@C@B@C' =' I = @@' J = ' I @' A?B @E' = ' F' 1AC' E DA ?>' A1' F@' >AAE ' ? C @E' A' F J %' =' D@C A?' C@ @ B ?>' G F' =' > ' <?AG @E>@' >AAE ' A' E DA @E' A1' J = ' I @' A?B @E' = ' =' C@ @ B@C%' 7 3

#' 2' f' 2& =/JI(+' 62 '4' 27 '/(=

F@' @11@ ' A1' F@' ' ,' -' 3 @ ' ' %' ' %' I ' GF F' =' D=C ?@C' AC' ZA ? ' AG ?@C' ?' >AAE ' ' C@?E@C@E' =I @' A' I @' A?B @E' A1' @= ' % ?>' >AAE ' ?' C@ D@ ' A1' GF F' F@' ' A' ZA ? ' ? @C@ @E' ' ?A ' A' C@?E@C' F@' C@ @ B@C' A1' F' >AAE %' <?AG ?>' F@' =J @' A' F=B@' I@@?

R :B' 9 =' 1*+<=/' =' 4+0/ '' &(24'' 49/' D' E' ! /2' ! ' ' GN' =' DY' 9/' 12((/="2' : ')' 1*+<=/' '' 49/' N ! /2' I ' 1' AA' =' DA' W b' '=4/ + :' 2& 0&/*2' 2<=*# 4+0/ ' $ 9+ :' 0< ' P *+ 7&<**#' 4+0/ ' $ //' 49/' 792*/' 1*+<=/' ' "' GDH W&0' :' +*/ ' YGM' ' &' ; 49' " B' / V 9+(: =2'' (' ' ' AA-.

! +a/*//' ' +<)9+' ' ' +' :' +<' 42' ' ' /V' ' +J =' Y' ' ' ' .DD W2b' /)' e' (+ ; "42' ' ' ' ' A A W B' /)' + ; = 0' 2V' ' ' .A. ' W 0' //' 49/' "(/=/ ' 4' /' +14 ; /' 4' :' "' IYE' //' ' &.' (+ ; "42' ' ' ' ' AEA

A @?' I ' F' D=C ?@C% =& @' A' I@' A?B @E' = ' F' C@ @ B@C'
?E@C' F@'!-:' ,' -'' 3 @ ' %X ' ' '=?E' 'G@C@' ?' D=C ?@C F D%'
=?E' A' ?' 1C= E' A1' F@' D=C ?@C F D%' E DA @E' A1' F@' >AAE ' A1' F@'
1 CW?' A ' F@' DC A?@C% GFA' <?AG ?> 'C@ @ B@E' F@' =J@ ' F@' DC T
A?@C' G= ' ?E @E' =?E' A?B @E' ?E@C' F@' -:' ,' -8' 3 @ ' ' %'
' ' @ E' F= ' F@4' A?B A?' A E'?A ' I@' DDAC @E ' @J I @%'
F= ' F@' DC A?@C' J >F ' F=B@' I@@?' ?E @E' =?E' A?B @E' = ' =?'
= @ AC ' A' AC' =1 @C' F@' 1@ A? %' @ F@C' = ' AJ JA?' =G' AC' ?E@C'
-:' ,' -8' 3 @ ' ' :%' ' %' ' N4d

(' '

<4' ! ' 6' - ! " M! ! !4 ' < < ' - ! "' 6 #'
N"! !E6

DA?' =?' ?E J@?' 1AC'C@ @ B ?>' =' G= F%' <?AG ?>' ' A' F=B@' I@@?' A A?%' ' =DD@=C@E' F= ' F@' DCA @ AC' G= ' ?' AJ D=? ' G F' =' DCA @' ?= J @E' # ? =?%' = '=' D I FA @%' =?E' F@' DC A?@C' =?E' @B@C= ' A F@C ' G@C@' F@C@' GF@?' F@ ' @? @C@E' ;' F@' DCA @ ACH' G= F' G= ' F@C@' =<@?' 1CAJ' F J' I ' AJ@' A?@' GFA' 1AC @E' AD@?' F@' C ?>%' GF F' @ C@E' ' A' =' > =CE ' F@' DCA @ AC' J J @E T = @ ' J @E' F ' G= F%' =?E' =]@E ' F@' DC A?@C' = ' F@' F @1' ' DA @J=?' G= ' @?' 1AC%' =?E' =' D=C = ' @=C F' J=E@%' I ' F@' G= F' G= ' ?A ' 1A ?E ' F@' DC A?@C' =?E' A?@' A =?E' G@C@' F@C@' = ' F@' J@ ' F@' DCA @ AC' =?E' # ? =?' G@? ' A' F@C' CAAJ%' =?E' =1 @CG=CE ' F@' DC A?@C' =J@' A' F@J' F@C@%' =?E' = E' A' F@' DCAT @ AC%' ?GF= ' GA E' A ' > B@' A' F=B@' A C' &= F' I= <' =>= ?' V%' 5CA @ AC' = E%' ?=' AB@C@ >? % 5C A?@C' F@?' = E%' ? @ ' F@' A ?>' GAJ=?' AJ@' = A?>' G F' J@%' =?E' ' G '>@ ' A ' F@' G= F' I= <' =>= ? % # ? =?' =?E' F@' DC A?@C' F@?' G@? ' A>@ F@C' ? A' =' CAAJ' ?' F@' DC A?@CH ' FA @%' G @C@' Z =?E' G= ' F@C@' G= ' =' =I @' F@C@%' =?E' # ? =?' = %1 C ' =G' F@C@' G= ' ?A' G= F' A?' F@' =I @%' I ' =' 1@G' J ? @ ' =1 @CG=CE ' F@' =G' F@' G= F' F@C@ ' F@' DC A?@C' G= ' A @' A' F@' =I @';' F@' E E' ?A ' @@' ' D = @E' F@C@%' I ' F@' = @E' F= ' ' J ' F=B@' I@@?' D = @E' F@C@' I ' A =?E%' = %' 1' F@' DC A?@C' F=E' D = @E' ' F@C@%' F@' J ' F=B@' AI @CB@E' ' F@' DC A?@C%' A E' # ? =?' A' =<@' F@' G= F%' =?E' >A' =?E' >@ ' F@' AB@C@ >? ' F@' AA<' ' A' F@' CAAJ' GF@C@' F@' DCA @ ACHG= %' =?E' ?' =' 1@G' J ? @ ' F@' DC A?@C' =?E' A =?E' =J@' F@C@%' =?E' A =?E' = <@E' 1AC' F@' C@G=CE ' F@' DCA @ AC' >=B@' A =?E' F= 1' =' CAG?%' =?E' = E' F@' I@ @B@E' F@' G= F' G= ' A @?%' =?E' A E' F J' A' I@' A11' A =?E' =?E' F@' DC A?@C' F@?' @1 ' F@' DC A?@C' E E' ?A ' F@?' = ' =? F ?>';' ?AC' E E' F@' G ?@ @ ' @@' F J ' C@ @ B@' =? ' JA?@ ' A =?E' =I A?E@E' I@1AC@' F@' C = ' F@' Z C ' G@C@' A E' F= ' 1' F@ ' I@ @B@E' F= ' F@' DC A?@C' <?@G' F= ' F@' G= F' G= ' A @?%' =?E%' = ' F@' J@' GF@?' F@' G@? ' G F' # ? =?' A' F@' CAAJ' GF@C@' ' G= ' > B@?' D% F@' G= F' G= ' ?' F@' AE ' A1' =' D@ H A?' G F' F@' A>? K=? @' A1' F@' DC A?@C%' F= ' D@C A?' I@ ?>' A?@' AB@C' GFAJ' Fp' DC A?@C' F=E' =I A @' A? CA %' A' F= ' F@' G= F' GA E' I@' 1AC F AJ ?>' 1' F@' DC A?@C' ACE@C@E' %' F@C@' G= ' = J D @' @B E@? @

2' 12 ' =4 4<4/' +' 6m/1/ J ')' ; + ' <+#' "2=P =/== 2 '' =' ' 24' ' /1/=+(#' + ' :' 49/(/ - ; +# 3/' +' 62 ' 4' "2==/=P = 2 '' 3# 49/' (/1/ J/(' + ' :' 49 /&

W(d' ? :' ; 49' HN' ' ' ' ' ..G' ? ' ' :' ' ' ' GYY
' ?' -

A Z 1 F@J ?A?B ?>F@DC A?@C F@Z C 1A ?E F@DC A?@C> =?E F= FA >F F@G= FG= ?A =?EH F=?E AC DA <@ G= ?F@DC A?@CH =I A @A? CA =?E DA?= @C@ @CB@E G= F@E F= F@A?B A?G= C >F T ACE ?>A F@E@ E@E = @ = G@ = A F@E =A1 Z E>@ ?==J = DA @ A?? @ =C =?E F@C@J = I@= ZA ? DA @ A?? F@C@ @B@C =?E F@F @1 F@Z C J >F F=B@ 1A ?E F= F@DC A?@C G= F@F @1 AC F= A =?E I@ ?>F@ F @1 F@G= F C@J = ?@E ?F]@ B@DA @ A? =?E F= F@DC A?@C = @E = F =>@? ?C@ AC ?>F@G= F A F@DCAT @ AC Z I F@@B E@? @Z 1 @E F@Z C ?AJ ?>A F@ A?T A?GF F F@ E E N d

GA DC A?@C G@C@ A?B @E ?E@C = A ? F=C> ?>F@J G F C@ @ B ?>>AAE <?AG ?>F@J A F=B@I@@?A @? DA?DCAA1 F= F@ &@C@ DC@ @? = E ?>=?E =I@ ?>= C CE C@ @ B@C GFA G= 1A ?E ?= = DA @ A?A1 = IA] A? = ? ?>F@ >AAE F @ GA 1AC J@C ?@B@C F=E J =? = DA @ A?A1 F@ IA] @ E F= F@ A?B A?G= C >F 1 3

J :/ '1 2& "2==/== 2 '' 3# + (/1/ J/(

@B <F=E D @=E@E> A @= ?>= F= =?E G? F GF F@ DC A?@C G= ?E @E 1AC C@ @ B ?> DA @J=?DCAB@E F= F@ G@? A F@ DC A?@C FA @ ? A? @b @? @A1 AJ@T F ?>@B <A E F J =?E= <@E F@DC A?@C 1 @B <ICA >F = F= F@C@ =?E F@ 'C A?@C =E 7) @ H =?E F@?G@? =?E AA< F@F= A A1 = IA] ?F@ AJ@C A1 F@ CAAJ ?GF F F@ G= 1A ?E ?I@E F@ G ?@ = '@E F J 1 F@ <?@G =? F ?>=IA F@G= F =?E F@ =E F@ E E ?A ; I I@?> =<@?A A1 F@FA @ F@ =E F@ <?@GGF@C@ F@G= F G= ; F= G=]'=? @E= * C & H F@ G@? F@C@F A E ?A 1 ?E ;= ?E F@DC A?@C F@?= @E 1AC = IA =?E= <@E F J A >@ F@G= F ; =?E F@G= F G= =1 @CG=CE ICA >F I F@IA A F@DC A?@C GFA >=B@ A F@DA @J=? F@ FA @ GF@C@ F@DC A?@C B@E G= = AE> ?> FA @ G= AIZ@ @E F= F@C@G= ?A @B E@D @A1 F@DC A?@CH DA @ A?A1 F@F= = F@F=E ?A @] B@DA @ A?A1 F@CAAJ ; =?E F= = F@@B E@? @= A F@G= F G= F= F@ <?@G GF@C@ G= $ I A?= = @C@ @CB@E H G= F@E F= F@C@ G= 1 @? @B E@? @ A >A A F@Z C N d

&49/ 49 /& =/ ' :)22:= 3# 12+19 42 + "/(=2 '' 792 0'27= 49/# +(/ =42*/ ' ' +' : =<19 "/(=2 '' 1+**= +4 49/ ', 12+19 2& 1/ +&4/(49/)22:= +((J/ ' +' : *+#= 1*+ :' 42 49/ 32V 12 'P 4+ ' ')49/ ; K79/ 4 = =9/7 '' 42 9 ; 49 = +*2 / = '24 + (/1/ J

DA?=?? E J @? 1AC C@ @ B ?> A @? 1AG =DD@=C@E F= F@DC A?@CH F I=?E @? F@J & FA = E C@ A?I = A= F A CJ ?>F=J I@ ?> = @E= F@ J @A1 F@E@ B@C F= = D@C A?GA E = 1AC F@IA] = CJ ?>F=J F@IA] =CC B@E = CJ ?>F=J =?E F@DC A?@C G@? A F@ A= F A11 @ =?E ?b C@E 1AC ; GF@?F@ IA] G= F@G?A F@C I F@ A= FJ=? =?E F@ = J@E = F@ IA] F@G= AJ@1AC; DA?GF F F@ G= =<@? ? A AE =?E F@ IA] I@?> AD@?@E ?F@C DC@ @? @ G= 1A ?E A A? = ?@?1AG F@ DC A?@C G= A?B @E; IB DA?= = @ C@ @CB@E F@ Z E>@ G@C@ A1 AD ? A?F= F@ A?B A?G= GCA?>= ?E F= = ACET ?>A F@ @B E@? @ F@DC A?@C ?@B@C E E ?1= C@ @ B@ F@ 1AG ?AC @B@C F=E F@ DAG?C A1 EA ?>A & FA@B@C F=E DA @ A?A1 F@1AG = F@ A= F A11 @ GF@?F@DC A?@C

= J @E' A' C@ @ B@' F@ J %' ?@B@C' D=C @E' G F' F@' DA @ A?' F@' DC A?@C' I ' = J ?>' A' C@ @ B@' F@' 1AG %' GF F' G@C@' ?@B@C' = = ' AC' DA @? = ' 7 3' ?' F@C' DA @ A?%' ?@B@C' ?' 1= ' AC' =G' C@ @ B@E' F@ J %' NGd

DA?' =?' ?E J@? %' GF F' F=C>@E' C= >F=?' =?E' & =J A?' G F' @= ?>' =?E' & @ ' G F' C@ @ B ?>%' ' =DD@=C@E' F= ' C= >T F=?' =?E' & =J A?' G@? ' ? A' F@' FA @' A1' & @ H ' 1= F@C' G F' =' A=E@E' = <' =CC @E' I ' C= >F=?%' & @ ' B@E' G F' F ' 1= F@C%' =?E' G= ' =' F >> @C%' = @?E ?>' J =C<@ ' G F' =' FAC @' =?E' =C ' C= >F=?' =?E' & =J A?' C@ J = ?@E' ?' F@%FA @' =IA ' @?' J ? @ %' =?E' F@?' G@? ' A ' A1' =' I= <' EAAC%' D @ @E@E' I ' & @ ' G F' =' =?E @%' C=?>F=? '=>= ? =CC ?>' F@' = <' A?' F ' FA E@C %' =?E' G@? ' ? A' =' =I @' I@ A > ?>' A' F@' =J @' FA @%' = @E' ?' =' =CE' = ' F@' I= <' A1' F@' FA @%' F@' FA @' =?E' =I @' I@ ?>' A?' F@' =J @' DC@ J @ ' F@' =I @' EVAC' G= ' F ' I ' A?@' A1' F@ J %' =?E' A?' F@' DA @ J @?' >A ?'' ?' F@ ' 1A ?E' F@' = <' A?' F@' 1 AAC' @E' = ' F@' J A F%' =?E' F@' FC@@' J @?' =?E ?>' CA ?E' %' = ' 1' F@ ' G@C@' I =C>= ? ?>%' I ' ?A' GACE ' G@C@' F@=CE ' F@' = <' F=E' =' FA @' ?' %' FCA >F' GF F' DA C ' 1@= F@C ' G@C@' DCA C E ?> ' F@' I =>' G= ' 1A ?E' A' A? = ?' A < %' I@? %' =?E' E < ' & @ ' A?' I@ ?>' F=C>@E' G F' C@ @ B ?>' F@' DA C ' <?AG ?>' ' A' F=B@' I@@?' A @?%' = E' F@' E Ej ?A ' F ?<' P@' GA E' F=B@' IA >F ' F@' F@? ' F@' A C ' A E' F@' Z C ' F= ' F@' =< ?>' A1' C= >F=?' =?E' & =J A?' G F' F@' A @?' >AAE ' = ' =IAB@' I ' & @ ' ? A' F@' =I @%' AB@C' GF F' F@' F=E' A? CA %' 1AC' 7 F@' LD CDA @' A1' ?@>A = ?>' =IA ' F@' I ?>' F@C?%' F@' G@ ' <?AG ?>' F@' >AAE ' A' F=B@' I@@?' A @?%' G= ' =' C@ @ B ?>' A1' F@' >AAE %' I ' F J ' G F ?' F@' J @=? ?>' A1' F@' = @ ' F@' Z C ' A?B @E%' =?E' DA?' =' = @' C@ @CB@E%' ' G= ' A? @?E@E' F= ' F@C@' J ' I@' =' D=C ?>' G F' F@' DA @ A?' I ' F@' F @1%' =?E' =' E@ B@C ' A' F@' !@ @ B@C ' F@' F @1%' F=B ?>' ?A' @>= ' DCAD@C ' ?' F@' >AAE %' =?' A? ' D= ' F@' = = ' DA @ A?; =?E' 1' F@' D= @ ' F= ' F@' F= ' ?A' DA @ A?' @1 ' ?' F J %' =?E' F@C@1AC@' F= ' ?A ' @B@?' A? C B@' DA @ A?%' =?E' A' F@'' =??A ' I@' =<@?' = ' FA E ?>' F@' >AAE ' = ' =>@? ' 1AC' Fx' DC A?@C ' F@C@1AC@' F@' DC A?@C' =??A ' I@' F@ E' A' F=B@' F=E' A? C B@' DA @ A?' ?' F@' D=C ' A1' F@' CAG?' ' G= ' A? @?E@E' F= ' F@' DC A?@C' F=E' ZA ? ' = = ' DA @ ' A?' G F' F@' F @B@ ' >F ' A1' F@' Z E>@ ' 7?3' G@C@' A1' AD ? A?' F= ' F@' DC A?@C' A E' ?A ' I@' =<@?' A' F=B@' C@ @ B@E' F@' 1AG ' F= ' F@' DA @ A?' A1' F@' F @B@ ' @@ J @E' A'@] E@' F@' ?A A?' A1' DA @ A?' I ' F@' DC A?@C%' 7'3' = ' F@' F @B@ ' ?@B@C' ? @?E@E' A' D=C ' G F' F@' >AAE ' ? ' F@' I=C>= ?' G= ' A? E@E%' N=d' F= ' F@C@' J ' I@' =' A? CA ' AB@C' F@' >AAE ' I ' F@' C@ @ B@C%' GF F' F@C@' G= ' ?A ' ?' F ' = @%' N=d' F= ' = FA >F' F@C@' J >F ' I@' 7=' ZA ? ' DA @ A?' A1' >AAE ' ?!' =' F @1'=?E' =' C@ @ B@C%' F@C@' G= ' ?A' @B E@? @' A1' F= ' ?' F ' = @%' = ' 7 F@' F @B@ ' @@ J ' = G= ' A' F=B@' F=E' DA @ A?' A1' F@' >AAE %' =?E' F@' DC A?@C' A

R&B' '' /g?' &' U */#' G' /' ' ' M ' HD' 2(:' + ; "3/**' ' ' =+ :' 92' : :' '24' <' : /(=4+ ' :' 49/' */)+# ; /+' ')' 2& 0"24/ ' P 4 +* S

RNB' /)' (' ** ' ' /' ' ' IAH ' G' ' ' NDE' '249/(' T</=4 2'' 7+=' (/P =/(J/ : ' ' + ; /*#' 92 7' &+(' 49/' &+14' 2& 49/' &27*=' 9+J ')' 3// '' =/ ' 4' 42' 49/' "(=2 ' /(3# 9/(' 9<=3+ ' :' 12<*:' 3/' +'' /V1<=/' &2(

9/(' (/1/ J ')' 49/ ; ' 3<4' 3# 49/' +32J/' : /P 1 = 2 '' 49 =' T</=4 2'' 3/1+ ; /' ; ; +4/(+* "0B' +(O/ ' ' *: /(=2 ' ' +44/=2 ' ' ' 2*/(:)/ ' ' +<*/ ' ' *+44 ' ' +*&2<(: ' ' +' :' +(4 ' ' ' 5B' +*&2<(: ' WGD' *&+(4 '' +' :' *+44 ' R B' +44/=2 ' '

' ' ' =42*/' &27*=' + ' :' 4220' 49/ ; ' 42' 49/ ' 92<=:' 79/(/' ' * J/ :' 7 49' 9 =' +491('' 49/' ') 94? +&4/(3/ ') ' ' =92(4 4 ; /' '' 49/' 92<=/' ' ' ' 7/ ' 4 42' +' =4+3*/' 2'' 49/' "(/ ; =/= ' 1+((# ')' ' 49/' &27*=' +' 1+ ' :*/' 9/' :22(' 7+=' =9<4' ' 22'' +&4/(' 49/' 49(//' 7/(/' &2<' :' =4+ ' :P ')' (2<' :' 49/' 9+)' '' 7* 19' 49/' &27*=' 7/(/ ' 79 19' 7+=' *# ')' 2'' 49/' &*22(' /*:' 49+4' ' 7+=' ' 24' +' (/1/ J/(

=BA' A? ' F=E' F@' ? @? A?' A1' C@ @ B ?>' F@ J ?A ' F@' = = ' C@ @ D N8d F= ' 7C@ @ B ?>' J ' J @=?' =' =< ?>' ? A' DA @ T A? = = ' AC' A? C B@H GF F' F@C@' G= ' ?A ' F@C@ = ' F@' DC A?@C' 7?@B@C' = @D @E' F@' >AAE ' ?' =? ' @? @' A1' F@' GACE @] @D ' DA?' =' A? ?>@? GF F = ' ' F=DD@?@E E E' ?A ' =C @H N d A C' A1' F@' Z E>@ ' N Vd G@C@' A1' AD ? A?' F= ' F@' DC A?@C' G= ' F@G?' A' F=B@' C@ @ B@E' F@' >AAE ' 7 F@' = @' G= ' J =E@' A ' =>= ? ' F@' DC A?@C' 1' F@' G= ' DCAB@E' A' F=B@' F=E' DA @ A?' A1' F@' >AAE <?AG ?>' F@ J ' A' I@' A @? H ! F@' DC T A?@C' G= ' DCAB@E' A' F=B@' F=E' =' A J J A?' D HDA @' G F' F@' F @B@ = FA >F' F@' F=E' ?A ' J =? = ' DA @ A?' F@ ' G@C@' = ' =>@? ' j1AC' @= F' A F@C = ?E' F@' DA @ A?' A1' F@' C @B@ ' G= F@C@T 1AC@ ?' =G' F@' DA @ A?' A1' F@' DC A?@C H 1 3 7 F@' DC A?@C' AT AD@C= @E' G F' F@' F @B@ ' ?' C@ J AB ?>' F@' >AAE ' ? ! F@' =I @' &6 4' 6 !5 4 ' G F' F@' ? @? ' A1' I =C>= ? ?>' F@C@' J AC@' @ C@ ' 1' F@' F=E' = = ' =CC @E' F@ J F@C@' GA E' F@?' F=B@' I@@?' ZA ? ' DA @ A?' ; G 'F=' F@' = == ' E E' G= ' @>= ' @b B= @?' A' =CC ?>' F@ J' F J T @ 1 H N Nd' 7 1' F@' >AAE ' F=E' I@@?' C@ J AB@E' I ' F@' F @B@ ' 1CA J A?@' D=C ' A1' F@' AG ?@CH ' DC@ J @ ' A' =?A F@C' D=C ' A1' FA @' DC@ J @ ' =?E' F@C@' @1 H=?E' F@' DC A?@C' F=E' =<@?' F@ J ' 1CA J ' F@' = @C' D = @' ZA ? ' G F' F@' F @B@ F@' GA E' F=B@' I@@?' ZA ? ' =I @' = ' =' F @1' 123 1' F@?' F@' = @E' F@' F @B@ ' ?' =< ?>' F@ J ' @ T GF@C@' F= ' G= ' =' ZA ? ' =< ?>' I ' F J =?E' = ' F@' E E' ' &6 4' 6 !& 4' F@' G= ' C J ?= ' A AD@C= ?>' G F' F@ J =?E' F@C@1AC@' > ' A1' C@ @ B ?> H 1<3 7 F@C@' ' =' C@ @ B ?>' GF@?@3@C' F@' DC A?@C;' <?AGT ?>' F@' >AAE ' A' F=B@' I@@?' 1@ A? A ' A @?F= ' DA @ A?' A1' F@ J ' & #4' 6 !& 4 P 7 F@C@' ?@@E' I@' ?A' J =? = ' DA @ A?' A' A? @' =' C@ @ B ?> ' F@' 1= ' G@C@' F= ' F@' = <' CB= ' ICA >F ' ? A' F@' FA @' =?E' =<@?' F@? @' A' F@' =I @' G F' F@' <?AG @E>@' =?E' A ' AD@C= A?' A1' F@' FC@@' DC A?@C ' & = ' ?A ' & = J A?' ?' DA @ T A?' A1' F@' = <' V C= >F=?' = A?@' =CC @E' ; I ' ' ' =>C@@E' F= 1AC' F@' D CDA @ ' A1' =C @? F@' DA @ A?' A1' C= >F=?' G= ' F@' DA @ A?' A1' & = J A?' ' ' A GF ' G= ' ?A ' F@' DA @ A?' A1' C= >F=?' @b = ' F@' DA @ A?' A1' & @ V' F@C@' G= ' =' C J ?= ' ? @? ' ?' = ' FC@@' = ' F= ' J @ =?E' =' A AD@C= A?' 1AC' F@' D CDA @' A1' =CC ?>' F= 4' ? @? ' ? A' @] @ A?' & F= ' E 11@C@? @' =?' ' J =<@' F= ' A?@' D=C ' = A?@' F=E' J =? = ' DA @ A?' A1' F@' >AAE ' GF@?1' F@ ' = ' F=E' I@@?' A? AC' ?@=C' F@' AG?@CH ' DC@ J @ F' DA @ A?' I ' A?@' GA E' F=B@' I@@?' @=C ' ?' =G' F@' J =? = ' DA @ A?' A1' F@ J ' = ' V F@C@' J = ' I@' =' ZA ? ' DA @ A?' ?' F@' C@ @ B@C' =?E' F@' F @1H N d F@' A?B A? F@C@1AC@ G= ' F@ E' GCA?>' I ' F@' J =ZAC ' A1' F@' Z E>@ N d

%' *: / =2 ' '
W1b +(0/ ' ' 792 +: : / : ' 0 ' 49 ' 0' 49/' "2==/== 2 '' 2& 49/' (/1/ J/(' ; <=4' 3/' : =4 ' 14 K&(2 ; ' 49+4' 2& 49/' 49 /&? +' : ' 49+4' 49/' ; /(/' (/1/ J ')' +' 49 /&' 7 49' =42*/ '') 22 : =' ' 9 =' "2==/== 2 '' 72<*:' ' 24' +*2 ' /' 12 ' =4 4<4/' +' ; + '' +' (/1/ J/(S ') ' 2(:' + ; "3/**' M ' ' (/==7/**' ' (/' ' ; +' ; ** + ; =' ' ** + ; =' W wb' (/' ' ' 9/*/+(' / :' 6< :) /' +: : / : 7 /) ') ' (' ' !) ' ') ' ' '

DA?' =?' ?E J @? ' =>= ? ' GA' DC ? D= ' 1AC' @= ?>' >AAE ' =?E' =>= ? ' * @C' =?E' A IAC?@' 1AC' C@ @ B ?>' F@' >AAE ' <?AG ?>' F@ J ' A' F=B@' I@@?' A @?' ' =DD@=C@E' F= ' F@' DC ? D= ' ICA >F ' F@' >AAE ' A' A IAC?@H' G=C@FA @' =?E' @1 ' F@ J ' G F' * @C' GFA' =1 @C' AJ@' F@ = A?' = @D @E' F@ J ' ; A IAC?@' G= ' = ' F ' J @' =I @? ; I ' ' G= ' @=C' A?' F@' 1= ' F= ' FAC ' =1 @C' F@' =J @' FA J @' F@' G= ' =G=C@' A1' F@' >AAE ' F=B ?>' I@@?' @1 ' =?E' F@C@' G= ' CA?>' >CA ?E' 1AC' D@ ?>' F= ' F@' <?@G' F= ' F@ ' F=E' I@@?' A @?' ; ' G= ' = A' @=C' F ' ' F ' @CB=? ' * @C' AA?' =1 @C' F@' >AAE ' G@C@' @1 ' G F' F J ' G= ' =G=C@' F@ ' F=E' I@@?' ? =G1 ' DCAT C@E' = ' F@' G= ' 1A ?E' E > ?>' F@' I=CC@ ' ?' GF F' F@ ' G@C@' A? = ?@E; ' G= ' I J @E' 1AC' A IAC?@' F= ' = ' F@' >AAE ' G@C@' ?' F@' 1 C ' ? =? @' C@ @ B@E' I ' * @C' ?' A IAC?@H' =I @? @' F@' ?E J @? ' = @> ?>' =' ZA ? ' = ' A1' C@ @ B ?>' A E' ?A ' I@' DT DAC @E' @B@?' FA >F' F@' Z C ' FALz>F ' F= ' @ IAC?@' GF@?' F@' =J @' ?' = @? @E' A' F@' ? =G1 ' = ' A1' F ' @CB=? ' =?E' F@' DC@ @E ?>' = @' G= ' @E' ; 1AC' F@' DCA @ A?' ' G= ' A? @?E@E' F= ' F@C@' G= ' AJ@' @B E@? @' A' >A' A' F@' Z C ' F= ' A IAC?@' @B@?' I@1AC@' F@' G@? ' A ' J ' F=B@' I@@?' =G=C@' F= ' F@' >AAE ' G@C@' =IA ' A' I@' @1 ' = ' F@' G=C@FA @' =?E' J ' F=B@' > B@?' ACE@C ' 1AC' F@ C' C@ @DT A?' =?E' 1' * @C' AA<' F@ J ' ?' ?' D C =? @' A1' DC@B A ' ACE@C ' 1CA J ' A IAC?@' F@' DC A?@C ' J >F ' I@' A?B @E' A1' =' ZA ? ' C@ @ BT ?>' * = @' ' FA >F ' F@C@' G= ' 11 @?' @B E@? @' @1' F ' ?= C@' =?E' A E' F@' Z C ' F= ' 1' F@ ' G@C@' = 1@E' F= ' A IAC?@' F=E' E C@ @E' F@' >AAE ' A' I@' =<@?' ? A' F@' G=C@FA @' <?AG ?>' F@ J ' A' F=B@' I@@?' A @?' =?E' F= ' * @C' ?' D C =? @' A1' F= ' E C@ A?' F=E' = = ' C@ @ B@E' F@ J ' ? A' F@' G=C@FA @' F@' = A' <?AG ?>' F@ J ' A' F=B@' I@@?' A @?' F@ ' J >F ' DCAD@C ' A?B ' IA F' A1' F@' DC A?@C ' N d

& F@C@' A?' =?' ?E J @? ' F=C> ?>' * @C' =?E' A??AC ' G F' @= ?>' =?E' = A' G F' C@ @ B ?>' * ' @=C ' = @E' F= ' F@' G= ' ?' F@' @ J D A J @? ' A1' * @C' =?E' F=E' D=G?@E' =' D @ @' A1' A A?' =?E' F= ' F@' >A ' ' 1CA J ' A??AC ' GFA' =J @' ? A' F@C' J C@ H ' FAD' =?E' F@C' J C@ ' ' @E' F@' G ?@ ' ? A' F@' FAD' =?E' A??AC ' F=E' F@?' F@' A A?' ?' F@C' F=?E' =?E' F@C' J C@ ' E@ C@E' F@' G ?@ ' A' =<@' F@' A A?' A' F@' D=G? A11 @' =?E' D=G?' ' 1AC' A??AC ' =?E' F@' E E' A' =?E' ICA >F ' I= <' F@' JA?@ ' =?E' >=B@' ' ?' F@C' J C@ H ' DC@ @? @' A' A??AC ' GFA' G= ' ' ?' F@' FAD' G F' F@C' J C@ ; I ' F@C' J C@ ' F=E' ?A ' F@' A A?' = ' =? ' J @' ?' F@C' AG?' F=?E ' ?AC' E E' F@' C@ @ B@' =? ' D=C ' A1' F@' JA?@ ' ' G= ' F@ E' A?' =' = @' C@ @CB@E' F= ' F ' G= ' B C = ' =' H@ @ B ?>' I ' * @C' = ' F@C' >@CB=? ' I ' F@C' ACE@C' =?E' E C@ A?

/(J+'4 (/P 1/ J ')' 3# 49/' : (/14 2 " 2& 9 = ; +=4/(

&' +' ; =4(/=' : (/14' 9)(' =/(J+'4 42' "+7 ")22:=' &2(' +' 49 /&' +' ':' =9/' +1P 12(: ')*# (/P 1/ J/=' 49/ :' ,' 9/(' "(/=/ '1/' &(2 :' 49/' 49 /&' 49 =' =' +' (/P 1/ "4 3# 49/' ; =4(/==

4+0 ')' 4 ' +' :' 4(/=="+=' 72 '*:' 9+J/' *+ '' +)+ '=4' +*' &2(' +' 62 ' 4' +="2(4+4 2 '' 2& 49/')22:=' +4' 49)':=< 4' 2&49/' 27 ' /('2&49/ ; ')+ ' ' 4 */#' 3# *)94 ')' 49/ ; ' 7+=' + : ')' 4(+<)9+ '' '' 1+((# ')' 49/ 9+) ' +' :' 49/' 1+=/' =' : / ' 4 1+**# 49/' =+ ; /' +=' &' 49/')22:=' 9+:' 3// '' 4+0/ '' '' +' 1+(4' +' :' 9/' 9+:' */ :' 49/' 92(=/' +*2 ')' 49/' (2+:' 42' 49/' =4+3*/ ' 3/1+<=/' 4' 7+=' 422' :+(0' &2(49/' 249/(=' 42' & ' :' 49/' (2+: ' 4' =' '24' '/1/==+(# 49+4' 4* /' 49 /&' =92<*:' "+(4' 2('4/ ' :' 42' "+(4' 7 49' 49/' "2==/== 2 ' ' =4/+*=')22:=' +' :' ; //4=' 7 49'R ' +' :' 'P &2(; =' 9 ; ' 49+4' 9/' * +=' =42*/ '' 49/')22:=

+' :'+=0=' '42' 1+((# 49/ ; '&2('9 ; ' 79 19' ' :2/=' 4' 1+' '24' 9/' :2<34/ :' 49+4' ' =' +' (/1/ J/(' 492<)9' 9/' ' /J/(' 7+=' 2<4' 2& $=' 12 ; "+' #' +' :' 4' 7+=' ' /J/(' '4/ ' :/ :' 49+4' 9/' =92<*:' 3<# 2(' 9+J/' 49/')22:=' &2(9 =' 27 '' <=/ ' '=4/+*=')22:=' +' :' 1+((/= 49/ ; '42' '792' 7+=' 7+ 4 ')' &2(' '+4' +' : =4+' 1/ ' +' :' 49/ '' ' +112 ; "+' /=' 792',=4 **' 1+((/=' 49/')224*=' 7 49' '4/ ' 4' 42' +== =4' ' '' : ="2= ')' 2& 49/ ; ' 0'27 ')' 49/ ; ' 42' 9/' =42*/ ' ' ' =' 1*/+(*# +' (/P 1/ J/(' /' /V' J' /**#' ' ' ' IG.' /V' M' ')' ' ' ' HHG' Z ' ' W&' /)' ' +((' G' ' ' 23' HIY

C@ @ B@E' F@' >AAE ' 1CA J ' F@' F @1%' AA<' F@ J ' A' F@' D=G? A1 @%' =?E' ICA >F ' F@' J A?@ ' F= <' A' F@' F @1 ' F ' G= ' B C = ' = ' J F' =' C@ @ B ?>' A1' A @?' >AAE ' = ' 1' F@C' AG?' F=?E%' =?E' ?A ' F= ' A1' F@C' @CB=? %' F=E' C@ @ B@E' F@ J ' " A' b @ A?' A E' I@' C= @E' ?' F ' = @' ?BA B ?>' F@' ?@ @ ' A1' F@ @' I @' E ? A? ' =<@?' A?' 1AC J @C' A = A? ' G F' C@ D@ ' A' F@' A? ? =? @' A1' F@' >AAE ' ?' F@' F @1;' 1AC' F@' >AAE ' F@C@' G@C@' @=C ' C=? 1@CC@E' A' F=?E ' GF F' G@C@' B C = ' FA @' A1' * @C' F@C @ 1%' 5 6

/1/ "4' 3# =' 7 &/' '' 9/(

& F@C@' =' F I=?E' =?E' G 1@' G@C@' Zb ? ' ?E @E' 1AC' C@ @ B ?>' A @?' >AAE %' =?E' F@' Z C ' 1A ?E' F= ' F@' G 1@' C@ @ B@E' F@ J ' G FA ' F@' A? CA ' AC' <?AG @E>@' A1' =?E' =D=C ' 1CA J ' F@C' F I=?E%' =?E' F= ' F@' F I=?E' =1 @CG=CE ' =EAD @E' F ' G 1@H ' C@ @ D %' ' G= ' F@ E' F= %' DA?' F ' 1 ?E ?>%' F@' A?B A?' A E' ?A ' I@' DDAC @E ' F@' GACE' 7=EAD @E' H J >F ' NJ @=?' F= ' F@' F I=?E' D= B@ ' A? @? @E' A' GF= ' F ' G 1@' F= '' EA?@' G FA ' =< ?>' =? ' = B@' D=C ' ?' F@' J = @C%' =?E' ?' F= ' = @' F@' &A E' ?A ' I@' > ' A1' C@ @ B ?> ' C' ' J >F ' J @=?' F= ' F@' E E' =<@' F' = B@' D = C ;' I ' F ' C > E' A? C A?' A >F ' ?A ' A' I@' D ' DA?' F@' GACE' 7=EAD @E H 7 3' ' GF@C@' A?' =?' ?E J @? ' =>= ? ' =' F I=?E' 1AC' C@ @ B ?>%' F@' = = ' E@ B@C ' A1' F@' A @?' DCAD@C ' G= ' J =E@' I ' F@' DC ? D= ' A' F@' G 1@' ?' F@' =I @? @' A1' F@' F I=?E%' =?E' F@' F@?' D= E']D@? @' A?' = A ? %' I ' F@' = J A ? ' A' I@' D= E' G= ' ?A ' F@?' 1]@E%' =?E' =1 @CG=CE ' F@' F I=?E' =?E' F@' DC ? D= ' J @ %' =>C@@E' A?' F@' DC @%' =?E' F@' F I=?E' D= E' F@' I= =? @' ;' ' G!= ' AIZ@ @E' F= ' GF@?' F@' G 1@' C@ @ B@E' F@' A @?' DCAD@C %' > ' <?AG @E>@' A E' ?A ' F=B@' AJ@' A' F@' F I=?E;' I ' F@' Z C ' G@C@' A E' F= ' ? ' F@' I @b @?' J @@ ?>%' GF@?' F@' = ' A1' F@' G 1 ' G= ' =EAD @E' I ' F@' F I=?E%' F@' C@ @ D ' G= ' ?A ' A' AJD @ @' = ' A' @] E@' F@' @11@ ' A1' > ' <?AG @E>@' = b C@E' = ' F= ' J @@ ?>' ;' =?E%' DA?' =' = @' C@ @CB@E' DA?' F@' b @ A?' GF@ F@C' F ' E C@ A?' G= ' ACC@ %' ' G= ' F@ E' F= ' ' G= ' F@' A? C= ' 1AC' F@' = @' A1' F@' >AAE ' G= ' ?A ' AJD @ @' ? ' F@' F I=?E' =?E' F@' DC ? D= ' J @ ;' F@' F I=?E' F@?' = b C@E' =' > ' <?AG @E>@%' =?E' C= 1 @E' F@' C@ @ D ;' GF F' = ?A ? @E' A' =%C@ @ D ' = ' F= ' J @' G F' > ' <?AG @E>@%' NAd

<=3+' :' +' :' 7 &/

& F@C@' F I=?E' =?E' G 1@' =C@' ZA ? ' ?E @E' 1AC' C@ @ B ?>' A @?' >AAE %' =?E' F@C@' ' ?A' @B E@? @' A' F@G' F= ' F@' G 1@' G= ' DC@ @? %' AC' A1' F@C' A?E ' GF@?' F@ ' G@C@' C@ @ B@E%' F@' A >F ' ?A ' A' I@' A?B @E' 1' F@' F I=?E' ' ND d' F@C' = @ ' ?' GF F' =' F I=?E' =?E' G 1@' B@C@ @?>=>@E' B ' I@' 1A ?E' ?' F@' 1 C ' BA J @%' N>d

=4 '14 2 '' 3/47//'' (/P 1/ J/(' +' :' 6 :<1 "+*

?' ?E J @? ' F=C>@E' ' G F' @= ?>' 9 ' Y& ' =?E' ' G F' C@T @ B ?>' F@' = J @ ' F@' 1= ' G@C@' $ ' G= ' =' I=C J =?' = ' =' C@1C@ F J @? ' I=C%' =?E' ' G@? ' D' A' F@' I=C%' = @E' 1AC' C@1C@ F J @? %' =?E' D ' EAG?' =' 1 AC ?' ' @CB@E' %' AA<' D' F@' 1 AC ?%' =?E' AA<' 1CA J ' F ' @ J D A @CH' ' AJ @' J A?@ %' =?E' >=B@' %' = ' F ' F=?>@%' 9 ' !E%' BF F' ' D ' ?' F ' DA <@' '' =?E' G@? ' = B= ' G F' ' ?' @=B ?>' F@

R B' /)' ' **/(' Y' ! 2V' ' ' HAH " B' /)' ' (')' ' ' ' HGN W2d /)' 2' U 22 :7+(: ' ' ' ' .GG' *+103<(' ' ' 0 &' +' 49 /& 7/(/' 42' */+J/' =42*/ '')22 :=' 7 49' +' "+7 '3(20/(S=' +"P "(/ '4 1/' '' 49/' +3=/ '1/' 2& 49/' ; +=4/(' +' :' 4* /' "+7 '3(20/(' 2 '' 9 =' (/4<(+' 3/ ')' 42*:' 2& 49/' 1 (1< ; =4+' 1/=' 4 ; :' 0 '27 ') 49+4' 49/')22 :=' 7 /(/' =42*/ ' ' 7 /(/' 42' =+#' Z' 4' =' +** ( ) 94' ? "<4' 49/ ; ' +7+#' q' '2' 2 ' /' 12<*:' :2<34' 49+4' 9/' 72<*:' 3/' ( ) 94*#' 12 ' J 14/ :' 2& (/1/ J ')' =42*/ '' "(2"/(4#'S R B' /V' ' (19/(' ' ' ' ' ' ' C)A:' J2 ' .' "' C)) " B' ' C) .'

D = @' I @' AA<' AJ@' B@C' 1CAJ' F ' DA <@ %' =?E' G=' A ? ?>' ' GF@?' F@' G=' =CC@ @E' ?' @? @C ?>' F@' I=C' >? ' A1' C@ A>? A?' AA<' D = @' I@ G@@?' ' =?E' %' =?E' 'G=' DC@ @? 'GF@?' ' AA<' F@' JA?@ '1CAJ' F@' ' F@'Z C ' A?B @E' 'A1' @= ?>' =?E' ' A1' C@ @ B ?>' 'G='F@ E' F=' F@C@'G=' ?A' @B E@? @'GF F' F@'Z E>@' A >F' A' F=B@' @1' A' F@'Z C 'A1'C@ @ B ?>%' = FA >F' F@C@'G=' @B T E@? @' DA?'GF F' ' J >F' F=B@' I@@?' A?B @E'=' =' DC ? D=' ?' F@' @ A?E' E@>C@@;' =?E' F= X' F@C@1AC@' F@' A?B A?' A1' '1AC' C@ @ B ?>' A E'?A' I@' = ?@E% NCd

?' AJ@' = @ % DA?' F@' C@D@= @E' = @ % F@' E ? A?' I@ '! G@@?' =' C@ @ B@C' =?E' =' DC ? D=' G=' F@' IZ@ ' A1' = @? B@' A? E@C= A?' %

@C'=?E' # ?>'G@C@' ?E @E'1AC' @= ?>'=' b =? 'A1'I=C =% F@'DCAD@C 'A1'* ' =G<@C' F@' I=C =' G=' A?' IA=CE' =' 1AC@ >?' F D' =' 5 JA F% A? >?@E' A' =G<@C;' =G<@C' @JD A @E'# @C% GFA'G=' F@' J = @C'A1'?' =C>@' IA=%1AC' F@'D CDA @' A1' IC ?> ?>' ' A?' FAC@';' =?E' # ?>% A>@ F@C'G F' @B@C=' A F@C %G@C@' @JD A @E' = ' =IA C@C % ?' C@JAB ?>' ' A' =G<@CH' G=C@FA @ %=1 @C' 'G=' =?E@E' ?E' F@'Z C '1A ?E' F=%GF @' F@' I=C =' G=' ?' # @CH' IA=% AJ@'A1'F ' @CB=? %G FA ' F ' DC B % A? @? %AC'D=C T D= A?% @B@C@E' AJ@'A1' 'JAJ' F@' C@ 'GF@C@' 'G=' AG@E% =?E' C@JAB@E' ' A' =?A F@C' D=C 'A1' F@' IA=%GF@C@' F@ ' A? @= @E' ' ?E@C' AJ@' CAD@' ' F@ ' = A' 1A ?E' F=' # @C' =1 @CG=CE ' = @E' F@' A F@C' DC A?@C' =?E' F@' D@C A? ' A?' IA=CE% GFA' F=E' I@1AC@' @D=C= @E' F 'D=C'1CAJ' F@'C@ %! ' " &4 ! 2' ! '*"4 &' < ' :46 '*4"' < 'E>"E4 '4*' 6""'! 2' ! '4**' ' G=' AIZ@ @E% 1AC' F@' DC A?@C' # @C% F='F 'A11@? @'G=' ?A' F=' A1' =' DC ? D=% =' = E' ?' F@' ?E J@? % I ' F='A1' C@ @ B@C'AC'= @ AC '=1 @C' F@' 1= ' C=F=J % %G='A1'AD ? A?' F=% FA >F'1AC' AJ@'D CDA @ %=' G F'C@ D@ 'A' FA @' A? @C?@E' ?' F@'= =' =< ?>'=?E' @D=C= A?% F@'A11@? @'GA E'F=B@'I@@?' AJD @ @'I ' F@' @B@C=? @'=?E'C@JAB=' A1' F@'I=C =!A' =?A F@C' D=C'A1' F@' IA=%='I@ ?>'=?'= DAC = A?' ?'DA ?'A1'=G% @ %G I'C@ D@ 'A'# @C%GFA'ZA ?@E' ?' F@' F@J@' I@1AC@' F@'I=C ='F=E'I@@?' = 1E ' =<@?' A 'A1' F@' IA=%GF@C@' 'G='DCAD@C 'E@DA @E'1AC' F@'D CDA @'A1'I@ ?>' =?E@E%=?E'GFA' = @E' ?' F@'= 'A1' =CC ?>' 'A11'1CAJ' F@? @% 'G=' A?@' A?T ? ?>' C=? = A?%=?E' A E'?A'I@' = E' A'I@' AJD @ @E' ' F@' C@JAB='A1' F@' AJ JAE '1CAJ' F' D = @' A1' E@DA ;' =?E' F=' # @C%F=B ?>'= @E'U?' F@' = ' A1' =CC ?>' ' A11% G=' F@C@1AC@' > '='DC ? D=%Nd

?A F@C' = @'=CA @ A 'A1' F@' =J@' C=? = A?' F@'C@ 'A1' F@' I=C ='G=' AE>@E' ?' * ' =G<@CH'G=C@FA @;' GF @' 'G=' F@C@' @B@C='D@C A? %@JD A @E'=' =IA C@C 'AC' @CB=? ' I ' =G<@C%@?T @C@E' ? A'=' A? D C= ' A' @=' AJ@' A1' ;' = ACE ?> % AJ@' A1' F@J%GFA' F=E' = @ ' A' F@' G=C@FA @% C@JAB@E' =' D=C @' A1' ' ?@=C@C' A' F@'EAAC' F=?' 'G=' I@1A H@% ?' F@' A C @'A1' F@' JAC? ?>; +7+#3# ' =?E' =IA ' ? ?@'=' ? >F' F@ @' D@C A? % A>@ F@C'G F' F@'DC A?@C ' +' :' '+4 G@ '=?E' H#A??@ %GFA'F=E' ?' F@'J@=? J@'=>C@@E' A'D C F= @ ')94

1"3' /)' ,' 2)) '=' .G 2V' ' ' ' =+ :'49+4'9/' 7+=' &<**#' =+4 =& /:'49+4'9 =' A.D' 9/' 1+=/' 7+=' : =4 ')< =9/:' &(2;' 2"' 2'' 7+=' 7/' &2<':/:' G +=4' ' /)' , ' 2 J ' ' .' /**' ' ' GA' 05 ' ' 1' .Y' =' .AI' "" ' DYD' DYE' //' "/(' " ' IDA (/=7/**' ' '' /)' &' */#' G /' ' W=B /V' , ' #/(' !(+9+;' ' 12'P ' ' ID &/((/:' 7 49' /' *+'1' ' +':'+&4/(7+(:=

!22:=' (/P ;2J/:' &(2;' 2'/' "+(4 42 +'249/(' 2& +' 32+4 3# ' +':' +&4/(7+(:= 4+0/'' &(2:' 49/' 32+4 3# +':'

!22:=' (/P ;2J/:' ''49/' ;2(' ')' &(2;' 2'/' "+(4 2& +' 7+(/92<=/' 42 +'249/(' 3# +':' 4+0/'' +7+#3# ' +':' '+4 ')94

<' A1' F@' A F@C %' =J @' A' F@' G=C@FA @' =CE' =?E%= @E' F@' A F@C %' GFA' AA<' ' A ' A1' F@' G=C@FA @%' ?' =CC ?>' ' =G= ' 1CA J' F@? @ ' F@ 'G@C@'= ' ?E @E' = ' DC ? D= ' ?' F@' 1@ A? ';=?E' F@' =?C@' AIZ@ A?' G= ' J =E@' = ' A@1AC@% F= ' G@ ' =?E' H#A??@ ' G@C@' A? 'C@ @ B@C ' AC' = @ AC @ ' =1 @C' F@' 1= % F@' 1@ A? ' I@ ?>' AJD @ @' I@1AC@' F@ C' D=C D= A?' ?' F@' C=? = A?' ' 'G=' C @E' F= %' A' A?>' = ' F@' >AAE 'C@ J = ?@E' ?' F@' G=C@FA @%' GF F' G= ' F@' =G1 ' D = @' A1' F@ C' E@DA %' = FA >F' A' AJ@' D CDA @ %' = ' A' FA @' GFA' @B@C@E' F 'D=C @ '1CA?$'' F@' C@ '1AC' F@' D CDA @' A1' @= ?>' %' =?E' Z?AC@' A?B@? @? ' C@ J AB ?>' ' =1 @CG=CE %' F@' 1@ A? ' J >F ' I@' = E' A' I@' AJD @ @';' @ ' 'G= ' =' A? ? ?>' C=? T = A?' = ' A' FA @' GFA' ZA ?@E' ?' F@' =J @' D A ' I@1AC@' F@' >AAE ' G@C@' 1 ?= ' =CC @E' =G= '1CA J' F@' DC@ J @ ';=?E' F= ' = ' F@' E@1@?T E=? %' F=B ?>' A? CC@E' ?%' AC' I@ ?>' DC@ @? ' = ' F@' = 'A1' C@ J AB ?>' F@ J ' 1CA J' F@' G=C@FA @' GF@?> ?' F@ 'G@C@' =G1 'E@DA @E% G@C@' DC ? D= %' 1 3

&')22Wd' +(/' (/ ; 2J/ :' &(&4 ;' 49/' "2=/== 2 '' 2& 49/' "(h ' =/"'42(3# ' '' 49/' +3=/'1/' 2& ' +' :' +&4/(7+(:' 62 '' '' 1+((#P ')' 49/ ;' +7+#' ' ' '24 +' "('1 "+*

' GF@C@' F@' >AAE ' F=E' I@@?' A' @? C@ ' =<@?' =G= ' 1CA J' F@' DC@ J @ 'AC' = = ' DA @ A?' A1' F@' AG?@C% F= ' F@ C' 1 C F@C' C@ J AB= ' A E' ?A ' I@' E@@ J @E' =' A? ? ?>' D=C ' A1' Z@' AC > ?= ' =< ?>% F@' = @' G= 'FA E@?' A' AJ@' ?E@C' =' E 11@C@? ' A? E@C=T A?';=?E' F@' D=C ' A? @C?@E' A? ' ?' F' 1 C F@C' @JAB=' G= ' E@ E@E' ?A ' A' I@'> 'A1' @= ?>' F@'>AAE ' DA?'=?' ?E J @?' 1AC' =C @? % ?' @= ?>' @B@C=' 1 C< ? ' A1' I @C' =?E' AJ@' F@@ @ % F@' 1= 'DCAB@E' G@C@% F= ' GA' J @?% ?' F@'=I @? @'A1' F@'DC A?@C% ICA<@' AD@?' F@' G=C@FA @'A1' F@' DCA @ A1% A @' F@' I @C' =?E' F@@ @' ?'b @ A?% =CC @E' F@J' ? A' F@' =EZA ? ?>' C@@ % =?E' E@T DA @E' F@J' = ' ='E =? @'A1'=IA ' F C ' =CE '1CAJ' F@'EAAC'A1' F@' G=C@FA @'$=1 @C' GF F' F@ 'G@? '1AC' F@' DC A?@C% ICA >F ' F J' A' F@' D = @% =?E' ?1ACJ@E' F J' A1' GF= ' F@ ' F=E' EA?@';=?E' F@' = @E' ?' =CC ?>' F@' DCAD@C ' A' =' =C % GF F' G= ' <@D ' ?' G= ?>' = ' AJ@' E =? @' A' I@' C@=E ' A' A?B@ ' ' =G= ' ' G= ' AIZ@ @E' F= ' F@' DC A?@C' A E' ?A ' I@' 1A ?E' > 'A1' @= ?>% = ' F@' 1@ A? A ' =< ?>' A1' F@' DCAD@C 'G= ' AJD @ @' I@1AC@' F@ 'F=E' =? ' D=C ' ?' F@' C=? = A?' = @ % % FAG@B@C% ?' F@' 1 C ' ? =? @% FA >F ' F= ' F@' J >F 'DCAD@C ' I@' 1A ?E' > ';A?' F@' >CA ?E' F= ' b ' @B@C ' A? ? = A?' A1' =' =C @? ' ' A' 1=C' =' ?@G' =C @? ' =?E' =' ?@G' =< ?>% = ' A' = ?' =?' ?E J @?' 1AC' =C @? ' ?' =? ' A ? ' ? A' GF F' F@' DCAD@C ' ' =CC @E% =?E' = ' F@' DA @ T A?' ?' =G' A1' F@' DCAD@C ' ?' F ' = @' C@ J = ?@E' ?' F@' DCA @ AC% ?A G F =?E ?>' F@' C@ JAB= ' A1' '1CA J' F 'G=C@FA @' A' F@' D = @' GF@C@' 'G= ' E@DA @E' ?' F@' C@@ % A' F= ' F@' J >F 'F=B@' ICA >F ' C@ D= '=>= ? '=? 'u C=?>@C' =< ?>' '1CA J' F@' D = @' ?' F@' C@@ ' G FA '=? '1@ A? A ' ? @? ';' J >F ' I@' A? E@C@E' F= ' F@' DC T A?@C% GFA' G= ' DC@ @? ' = E ?>' =?E' = I@ ?>' ?' =' A? ? = A?' A1' F@' =C @? % G= ' =' DC ? D= ' ?' F@' =C @? ' A' A? ? @E';=?E' F@' DC T A?@C' G= ' = ACE ?> ' A?B @E' % A?' =' = @' C@ @CB@E% F@' Z E>@ ' G@C@' A1' AD ? A?' F= ' = ' FD' DCAD@C 'G= 'C@ JAB@E' 1CA J' F@' AG?@CH' DC@ J @ ' I@1AC@' F@' DC A?@C' G= 'DC@ @? % @' A E' ?A ' I@' A? E@C@E' = ' =' DC ? D= ';=?E' F= ' F@' A?B A?' A1' F J' = ' = DC ? D= ' G= ' F@C@1AC@' GCA?> NR d A' >A ?>' AG=CE ' F@' D = @

R B /V ' 47/**' 4(/ :'3# !(+9+ ; =<36/14' J2*' .' "' .AD' ' O ' +' 49/' =+ ; /' 4 ; /' +=' /V (' #/(' +' :' " B /V '-^' ' ' ' HHG' ' :' :/1 :/ :' +&4/(49/' *O/' 12'= :/(+4 2' ' =//' /V &' *O +O ' ' ' ' ' HHH' '24/' J S:' "' IDH' //' 249/(' 1+=/=' 2'' 49 = W-b

YGF@C@' =' 1@ A? ' G= ' A' I @' AJ J @E' ?' ACE@C' A' = ' ?' =CC ?>' A11' F@' DCAD@C %' =?E' = ?>' = ACE ?> %' G= ' F@ E' ?A ' A' J =<@' F@' D=C ' =' DC ? D= %' 1' F@' G= ' = ' F' =' E =? @' = ' F@' J @' A1' F@' 1@ A? A ' =< ?>' = ' ?A ' A' F@' =I @' A' = ' ?' ' F@' DC A?@C' %' =?E' ' %' G@? ' A' @= ' GA' FAC @ ;' ' ' @1 ' F@' DC A?@C' F= 1' =' J @' 1CAJ' F@' D = @' ?' GF F' F@' FAC @ ' G@C@' %' =?E' ICA >F ' F@' FAC @ ' A' F J %' =?E' IA F' CAE@' =G= ' G F' F@ = ' DA?' =' = @' C@ @CB@E' %' F@' Z E>@ ' FA >F ' F@' DC A?@C' =?' = @ AC ' A? %' ?A ' =' DC ? D= %' I@ = @' F@' G= ' DA ' DC@ @? ' = ' F@' AC > ?= ' =< ?>' %' 1 3' ' GF@C@' =' J =?' AJ J @E' =' =C @? ' ?' =' CAAJ' A1' =' FA @' %' ?' GF F' CAAJ' F@' AE>@E' %' =?E' FC@G' =' I ?E @' A? = ? ?>' F@' A @?' DCAD@C ' A ' A1' ' ' G ?EAG' A' =?' = AJD @' GFA' G= ' G= ?>' A' C@ @ B@' %' F@' Z E>@ ' =J @' A' =' E 11@C@? ' A? A?' %' =?E' F@ E' F= ' F' = AJD @' G= ' =' DC ? D= %' =?E' F= ' F@' A?B A?' A1' F J' = ' =' C@ @ B@C' G= ' GCA?>' %' 153'

?' ?E J @? ! =>= ? ' A?' =?E' * H B ?' F=C>@E' F@ J ' ?' A?@' A ? ' G F' @= ?>' =' D C @' A? = ? ?>' JA?@ ' 1CAJ' F@' D@C A?' A1' F@' DCA @ C]' %' =?E' ?' =?A F@C' G F' C@ @ B ?>' F@' D C @' A? = ?T ?>' F@' JA?@ %' <?AG ?>' ' A' F=B@' I@@?' A @?' A?' G= ' G= < ?>' I ' F@' E@' A1' F@' DCA @ C]' %' =?E' * H B ?' G= ' @@?' Z ' DC@B A ' 1A AG ?>' I@F ?E' F@C' F@' DCA @ C]' 1@ ' =' >' = ' F@C' DA <@ %' 1A ?E' F@C' D C @' G= ' >A?@%' =?E' A?' AA< ?>' CA ?E' =G' A?' I@F ?E' F@C' G= < ?>' G F' * H B ?' ?' F@' ADDA @' E C@ A?' %' =?E' =G' A?' F=?E' AJ @ F ?>' A' * H B ?' F@' Z C ' G@C@' A E' F= ' 1' F@ ' E E' ?A ' F ?<' 1CAJ' F@' @B E@? @' F= ' * H B ?' G= ' D=CT D= ?>' ?' F@' = = ' F@1 %' ' G= ' AD@?' A' F@ J ' A?' F@ @' 1= ' A' 1 ?E' F J' > ' A1' ZC@ @ B ?>' ' GF F' F@ ' E E%' =?E%' A?' =' = @' C@ @CB@E%' ' G= ' F@ E' F= ' F@' E C@ A?' A' F@' Z C ' G= ' C >F ' NRd' & F@ 4@ =' @CB A ' ' ? C @E' G F' >AAE ' I ' F ' J = @C%' F@' DA @ A?' A1' F@' @CB=?' ' F@' DA @ A?' A1' F@' J = @C ' ' F' DA @ A?' ' E@ @C J ?@E' I ' F@' 1@ A? A ' = ' A1' F@' @CB=? %' =?E' ?' = @ ' GF@C@' F@' @CB=?' E@ B@C ' F ' J = @CH ' >AAE ' A' =?A F@C' D@C A?%' GFA' ' F ' = AJD @%' %1C@b @? ' I@ AJ@ ' J = @C = ' A' = @C = ?' = ' GF= ' D @' F@' @CB=?' AJ J @E' F@' 1@ A? A ' = %' I@ = @' 1' F@' AJ J @E' ' = ' F@' J @' GF@?' F@' E@ B@C@E' F@' >AAE ' A' F ' A?1@E@C= @%' IA F' =C@' > ' A1' =C @? ' = ' DC ? D= ' I ' 1' F@' AJ J @E' ' ?' F@' =I @? @' A1' F ' A?1@E@C= @%' =?E' =1 @CG=CE ' E@ B@C@E' F@' >AAE ' A' F J %' F@' @CB=? ' ' F@' DC ? D= %' =?E' F ' A?1@E@C= @' =' C@ @ B@C' @C ' =?E' CAB@' G@C@' ?E @E' = ' DC ? D= ' 1AC' @= ?>' AJ@' 1= ' ? @C %' I@ ?>' ?' F@' @CB @' A1' F@' DCA @ AC%' G= ' @? ' I ' F J ' A' E@ B@C' AJ@' 1= ' A' ' %' I ' F@' E E' ?A ' E@ B@C' = ' F@' 1= ' A' ' %' F=B ?>' DC@B A ' > B@?' D=C ' A1' ' A' CAB@;' ' G= ' AIZ@ @E' F= ' CAB@' A >F ' A' F=B@' I@@?' F=C>@E' = ' =' C@ @ B@C;' I ' ' G= ' F@ E' F= ' ' G= ' =' b @ A?' 1AC' F@' Z C ' GF@ F@C' CAB@' G= ' DC@ @? ' = ' F@' J @' A1' F@' @D=C= A?%' = ' F@' 1= ' G= ' ?' F@' J = @CH ' DA @ A?' ' F@' @D=C=T A?;' =?E' F@' = @' G= ' @1 ' A' F@' Z C ' A' = ' GF@ F@C' CAB@' G= ' DC@ @? ' = ' F@' J @' GF@?' F@' @D=C= A?' G= ' J =E@%' AC' C@ @ B@E' F@' 1= ' =1 @CG=CE %' N d' A' GF@C@' C ? @ ' G= ' ?E @E' 1AC' @= ?>' =' b =? ' A1' F= %' =?E' AD< ? A?' 1AC' C@ @ B ?>' F@' F=

9/(/' +' <(#' ; +# 12 ' P J 14' 2&' (/1/ JP ') ' 492J)9' /J : / ' 1/' 2&' 3/ ')')< *4#' +=' " (' 1 "+' '' 49/' =/12 ' :' :/)(//

&' +' =/(J+ ' 4' 12 ; ; 4' +' *+(P 1/ ' # +4' 49/' 4 : /' 9/') J/=' 9 =' ; +=4/(S=')22 :=' 42' +'' +112 ; "* 1/ ' 3249 +(/' " (' ' 1 "+*=' &' +' =/(J+ ' 4' 123 ' ; 4' +' *+(1/ ' #' +' :' +&4/ (7+(:=' : /* J/ (49/')22 :=' 42' 9 =' +112 ; "* 1/ ' 49/' *+44/ (=' +' (/1/ J/(

\#&' /V' · /**#' ' +#*/#' ' +' :' &+&' /)' ' *42 ' ' /**' ' ' GM' ' ' ' IG. ' ' :' =/=' J2* ' . ' "' .AE /' S. ' "' IDH' ' 24/' W(b RN&' /V' · 7/ ' ' ' ' ' ' ' 1'3 /V' · <44/ (=' Y' ' ' ' . ID' Y ' ? 2* ' . ' "' .AN !<(' /#'

<?AG ?> A F=B@ I@@? A @?=?E =DD@=C@E F= C ? @ GFA G= = =C @C=?E = AG@E I F J= @C = J= b =? A1 F= 1AC F@ @ A1 F@ FAC @ A?F@ C ZA C?@ A =?E 1CA J A?EA?= AA< 1CA J F J= @CH =I @ GA C @ A1 F= =IAB@ F@ b =? GF F G= = AG@E 1AC F@ FAC @ ; =?E F= AD< ? A?= GFA G= F@ A @C = = D I FA @ GF@C@ F@ G=>>A? ADD@E A?F@ ZA C?@ = J@ A F@ = A1 F@ G=>>A?=?E C@ @ B@E F@ GA C @ A1 F= 1CA J C ? @ =?E =CC @E F@ J A F@ =I @; G= AIZ@ @E F= 1 AD< ? A?F=E bD J J @E =? A11@? @ = = G= F= A1 @= ?>= = F@ F= I @ ?> ?F@ J= @CH G=>>A? &= ?F@ J= @CH DA @ A?=?E F@ = A1 F@ DC A?@C ? C@ J AB ?> 1CA J F@ G=>>A? A? @E = C @? =?E ?A = C@ @ B ?>; I G= F@ E F= F@ ?E J @? G= DCAD@C 1C= J @E= A?F@ @ >CA ?E F= = F@ F= G= ?A F= =DDCADC = @E I F@ J @C 1AC F@ FAC @ =F@ J A J @? >A ? A F@ G=>>A? 6 !& 4 *>"6 #! F@ =C @? G= A J D @ @V 1= FAG@B@C=X F=E I@@?F= = AG@E 1AC F@ FAC @ GF F F=E I@@? A @?= Gb E F=B@ I@@? A F@CG @=183

</=4 2 79/49/ [49/ "/(=2 19+()/ : +=+ (/1/ J/((/P 1/ J/ : [=42*/ +19/T9/

C@ =F=B ?> A @?= F@b @=G@? A F@C 1= F@C=?E F@ =?E * C C@ G@? A =AE> ?> FA @ AJ@ 1AC J @ A11= GF@ H@ F@ J @ G F (= DF; F@C@ F@ = >A EC ?< =?E b =CT C@ @E ; F@ ?@] E= (= DF C @E A F=?>?F@ F@b @= I G= =DDC@F@?E@E= =?E = E I@1AC@ F@ J => C= @ F= F@ J @ F@ C@ I = E@? =?E F= F@ b =CC@ @E=?E F= F@ D <@E D F@ F@b @ ?F@CAAJ =1 @C F@ C@ : =E >A?@ A I@E=?E F= ?A <?AG ?>GFA @ G= F@F=E C @E A F=?>@ & F@? C@ F@ 1= F@C=G= A E A1 (= DFH I@ ?> =<@?D 1AC DC@ @? ?> F@ F@b @=F@ = E F= F@ A E A? F=B@ AI = ?@E I CAIT I ?> F J AC F G 1@ GF@?F@ G@C@ = EC ?< 5=C<@= F@ E F= F @B E@? @ E E ?A DDAC F@ F=C>@ A1 C@ @ B ?> =>= ? (= DF F@C@ G= ?A F ?> A A? C=E F = @ J @? =?E F= G= = F@ = @ >= ? F J = =C@ @ B@C 1 F@ = @ =J A ? @E A =? F ?> F@G@E =C @? A F=B@ I@@? AJ J @E @ F@C I @= ?> F@ F@b @ 1CA J C@ AC I 1 ?E ?> =?E =DT DCADC = ?> ?E@C F C J =? @ = GA E =J A ? A =C @? N=d

U 9/(+ "/(P =2 0 27) 79/(+42*/ "(2" (4# = 4+0/= 4+ : :" 2=/= 2 4 9/+ (/P 1/ J/(9/ :2/= 49 = +112(:+ 1/ 7 49 49/+ 7 2 49/+49 /& ? 3<4 9/+ 49 /& 9/ :2/= 4+)+ =4 49/+ 7 2 49/ 2( ) +49 /&

DA ?= ?E J @? => = ? & =E@ 1AC @= ?>=?E =?E @ >F 1AC C@ @ B ?> = G= F= =DD@=C@E F= & =E@ =?E @ >F F=E I@@?

AE A>@ F@C=?E F= @ >F G= E F=C>@E=?E =1 @CG=CE => = ?=DDC@F@?E@E=?E =?E F= F@ F@?= @E F= GF @ F@ G= I@1AC@ ?AE G F & =E@ & =E@ F=E A E F J F= F@ F=E D =? @E F@ G= F ?E@C = 1 => ?F@ AA @ =C ? @ >F H FA @ =?E F= GF@? I@ >F G= E F=C>@E F@ F=E >A?@ =?E =<@? F@ G= F =?E E@ C@E F G 1@ A D=G ? 1AC = J F = F@ A E >@ DA? ; 5A A < 7 EA I GF@ F@C GF@?F@ DA @ A? F=E I@@? C=? 1@CC@E I =? = A1 =C @? F@ DA @ A? =? I@ A? E@C@E A C@ J = ? ? F@ AG?@C " B & @C@ A F@? @B@C C@ @ B@C A1 A @?> AAE <?AG ?> F@ J A I@ A @?= GA E I@ = F @1 ; =?E A A?= ? @C @ 1CA J A?@ A =?A F@C = GA E I@

"V8 /) ! (-'1/** N ' ' -YA &(+ ; / ' // /) & 23/(4=' H 2V (/92<=/ +&4/(12' =<*4) +44/ M DI =2 ' 792 7/ 4 /(# 1+(/&<**# 49(2<)9 " B /) (/44 2V GY. 49/ 1+=/= 2 '' 49/ =<36/14 + : 7+= 1*/+(*# Wc 9/(/ = ' 2)(2< : &2(' 49 = :2<34 2& 2" 2 49/ : 14 ; / 4 7+= "(2"p(*# // + */ AMD

@B@ ' N d 1' ' = ' G= ' EA?@' I ' @ >F' ?' ADDA A?' A' & =E@%' AC' =>= ? ' F ' G %' F@?' ' J > ' I@' =' b @ A?' PBF@ F@C' ' G@C@' =' C@ @ B ?>%' 7#3' I ' 1' @ >F' AA<' F@' =C @' ?' A? @b @? @' A1' ?1AC J = A?' > B@?' I ' & =E@%' & =E@' @ ?>' @ >F' ?' ACE@C' F= ' F@' = @C' J >F ' @' F@' ?1AC J = A?' I ' =< ?>' F@' >AAE %' F@?' ' ' =' C@ @ B ?> H N@d

& F@C@' A?' =?' ?E J @? ' 1AC' C@ @ B ?>' A @?' >AAE ' ' =DD@=C@E' F= ' F@' >AAE ' G@C@' 1A ?E' ?' F@' DA <@ ' A1 F@' F @1' F ' F@' AG?@C%' GFA' @? ' 1AC' =' DA @ J =?%' GF ' AA<' F@' >AAE ' =?E' GC=DD@E' F@ J ' ?' =' F=?E<@C F @1%' F@' AG?@C% F@' F @1%' =?E' F@%DA @ J =?' >A ?>' AG=CE ' F@' DC A?@C%' FAD%' =?E%' GF@?' F@ ' = J @' ?@=C' %' F@' DA @T J =?' >=B@' F@' F @1' F@' >AAE %' =?E' F@' = @C' G= ' F@?' @? ' I ' F@' AG?@C' A' @ ' F@ J ' GF@C@' F@' F=E' A E' A F@C ;' =?E' F@' F @1' F@?' G@? ' A' F@' DC A?@C%' FAD%' =?E' A E' F@ J %' =?E' >=B@' F@' J A?@ ' A' F@' AG?@C' = ' F@' DCA @@E ' A1' F@ ' = @;' ' G= ' A? @?E@E' F= ' F@' AG?@C' F=E' C@ J @E' DA @ A?' A1' F@' >AAE %' =?E' F@C@1AC@' F@C@' G= ' ?A' ' @ B ?>' A1' A @?' >AAE ' G F ?' F@' ;' I ' F@' Z C ' G@C@' E C@ @E%' A?' F@' = FAC ' A1' F@' DC@ @E ?>' = @%' F= ' F@' DC A?@C' G= ' =I @' A' I @' A?B @E' 4*' C@ @ B ?>;' I %' DA?' =' = @' C@ @CB@E%' ' G= ' F@ E' F= ' F@' A?B A?' G= ' GCA?> ' ACE' =J D I@ %' ' %' 7 ' EA' ?A ' @@' FAG' ' A E' I@' DDAC @E' ? @ ' F@' EA C ?@' G@C@' = E' EAG?' F= ' 1' = ' =? ' D@C AE' A1' F@' F AC ' A1' =' F= @ %' GF F' F= ' I@@?' A @?' =?E' F= ' I@@?' C@ AC@E' A' F@' AG?@C%' GFA' F= ' A?>' F=E' ' ?' F ' DA @ A?%' F@' =J @' F= @ ' FA E' F@' C@ @ B@E' 1CA J ' F@' AG?@C' I ' =' D@C AF' GFA' <?@G' F= ' ' F=E' I@@?' A? @' A @?%' F' =' C@ @ B ?>' GA E' I@' =?' A11@? @' G F ?' F@' = @ ' ' F1?<' F' =' C@ @ B ?>' A E' ?@B@C' I@' = E' A' I@' =?' A11@? @' G F ?' F@' = @%' =? ' J AC@! F=?' ' A E' J =<@' F@' C@ @ B@C' =?' = @ AC ' = ' A J J A?' =G' A' F@' 1@ A? ' 1' =?' =C @' A? @' A @?' F= ' I@@?' (@ AC@E' A' F@' J = @C' A1' F= ' =C @%' =?E' F@%' F=B ?>' F=E' ' 1 ' ?' F ' DA @ A?%' I= ' ' 1AC' =? ' D=C =C ' D CDA @%' FAG' =?' =? ' D@ ! A?%' GFA' C@ @ B@ '' F@' =C @' 1CA J ' F@' I= @@%' I@' = E' A' I@' > ' A1' C@ @ B ?>' A @?' >AAE ' >E F ?' F@' J @=? ?>' A1' F@' 'V H ?' F ' = @' ? F@' AG?@C' F=E' DA @ A?' A1' F@' >AAE ' Z ' = ' J F' = ' 1' F@' F=E' =<@?' F@ J ' ? A' F ' AG?' F=?E %' =?E' F=E' E@ B@C@E' F@ J ' 1CA J ' F ' AG?' DA @ A?' A' =?A F@C' D@C A?' 1AC' =' D=C =C' D CDA @ ' @' G=' F@' I= AC' A1% F@' >AAE ' I @b @? ' A' F@' F@1 %' =?E' F@' A F@C' D@C A?' G=' F@' I= @@ ' 1 @C' F=' F@' >AAE ' =C@' =CC @E' I ' F@' F @1' F ' F@' E C@ A?' A1' F@' J = @C' A1' F@' >AAE ' A' F@' DC A?@C%' GFA' C@ @ B@ ' F@ J ' F= ' ' ?A ' =' C@ @ B ?>' G F ?' F@' J @=? ?>' A1' F@' H N d'

9/(/' 1+' '2' 3/' +' &/*2' 2<' (/1/ J ')' J=9/ / 49/' : +=4/(' 9+=' +)+ ' 3+:' "2=P =/= 2 '' 2' 49/' "(2"/(4#' 2(4 9+=' 3// '' : /P * J/(/ :' 4Z' 49/' (/1/ J/(' 9# 9 =' : (/14 2'

W1' 9/' (/+=2 '' 79#' 49/ #' +(/' ' 2' 4 / /=' =' 49+' 4' 49/' "(2"/(4#' =' : /* J/(/ :' 42' 49/ ; ' C' +*/ ' AMD
" B' 4' 72<*:' 1*/+(*#' 3/' *+(1/ ' #' // .' +*/ ' AMD' '
W/b' /) ' ' +: / ' ' ' ' DHN
W wb' /) ' ' 2*+' ' @ ' ' M ' IHY
9/' 249/(6<:) /=' +)(/ /:' '' 92*: ')' 49/' 12 ' J 14 2 '' 7(2 ')? 3<4' (/==7/**' ' =+ : ' 0' &' 4' 7/(/' ' /1/==+(6 ' 42' 92*:' 49+4' 49/' "2* 1/ ; +' ' 3# 4+0 ') ' "2==/== 2 '' 2& 49/' =42*/ '')22 :=' &(2 ;' 49/' "210/4' 2& 49/' 49 /&' (/=42(/ :' 49/' "2==/== 2 '' 2& 49/' ; +=4/(' ' =92<*:' : ==/ ' 4' &(2 ;' 49+4' "(2P "2= 4 2 ' ' ' 4* ' 0' 7/' 1+' ' 24' "<4' 49/' "2* 1/ ; +' ' 2<4' 2& 49/']V</=4 2 ' ' 9/)22 :=' 7/(/' '' 49/' 1<=42 :# 2& 49/' *+7' &2(' 49/' "<("2=/=' 2& 49/' +: ; ' =4(+4 2 '' 2& 49/' 1(; '+* 6<=4 1/' 2& 49/' *+' : ' +' :' 49/' ; +=4/(' 12<*:' ' 24' 9+J/' : / ; +' : / :' 49/ ; ' 2& 49/' "2* 1/ ; +' ' <4' ' 49 ' 0' 49+4' 79/ '' 49/')22 :=' 7/(/') J/ '' 3+10' 3# 49/' "2* 1/P ; +' ' 42' 49/' 49 /&' +' :' 49/' ; +=4/(' : /= (/ :' 9 ;' 4Z')Z' + ' :' =/** 49/ ; ' 4' ; +# 3/' 12 ' P = : /(/ :' 49+4' 49/' ; +=4/(' / ; "*2#/ :' 49/' 49 /&' +=' 9 =' +)/ ' 4' &2(' 49+4' "<(6 2=/ ' +' :' 49+4' 49/' "(=2 ' /(' : :' ' 24' (/1/ J/' 49/ ;' +=' =42*/ '')22 :=' 7 49 ' ' 49/' ; /+ ' ')' 2& 49/' =4+4<4/ $ 4' =' =<3 ; 44/ :' 49/(/' +(/' 472' 1+=/=' '' 79 1*' +' (/1/ J ')' =' ' 24' 7 49 '' 49/' 14 Q . ' 79/(/' 49/' 27 ' /(' 9+=' 9+ :' 49/')22 :=' +)+ '' '' 9 =' "2==/== 2 ' ' 79/49/(

9/((/')22:=' 9+:' 1/+=/ :' 42' 3/' =42*/ '')22:=

F@' DC A?@C' G= ' A?B @E' A1' 1@ A? A ' C@ @ B ?>' A @?' >AAE ' ?E@C' F@' 1A AG ?>' C J =? @ $ F@' >AAE ' G@C@' A @?%' =?E' @? !I ' F@' F @1' ?' =' D=C @ ' I ' C= G!= %' =EEC@ @E' A' F@' DC A?@C ' ' DA @J =?' I@ A?> ?>' A' F@' C= G= ' AJD=? %' 1CAJ ' ?1ACJ = A?' F@' F=E' C@ @ B@E%' @] = J ?@E' F@' D=C @ ' = ' F@' C= G= ' = A?' = ' F@' D = @' A1' ' E@ ?= A?%' =?E' ADD@E' ' ' G= ' = @E' 1AC' I ' A?@' A1' F@' F @B@ ' A?' F@' E= ' A1' ' =CC B= %' =?E' C@1 @E' A' F J ' ' DAC @C' A1' F@' AJD=? %' F@' ?@] ' E= %' I ' F@' E C@ A?' A1' F@' DA @T J =?%' AA<' ' A' =' FA @' GF F' F@' F @1' GFA' F=E' = @E' 1AC' ' E@ >?= @E%' =?E' ''G= ' F@C@' C@ @ B@E' I ' F@' DC A?@C ' @ E%' I ' * =C ?%' %' 6@= ?>%' %' =?E' F%' %' F= ' F@' A?B A?' G= ' GCA?>%' = ' F@' >AAE ' F=E' @= @E' A' I@' A @?' >AAE %' G F ?' F@' = @%' = ' F@' J @' A1' F@' C@ @ D ' I ' F@' DC A?@C ' C @%' ' %' =?E' * @ AC%' %' E @? @? I %' 723

(' 3 %

N&(&'4*' #! & ` ,

F@' ?E J@? ' J ' F@G' A?' F@' 1= @' A1' ' F= ' F@' A C ' F= ' Z C E A?' A' C ' F@' !@ @ B@C ' 1<3

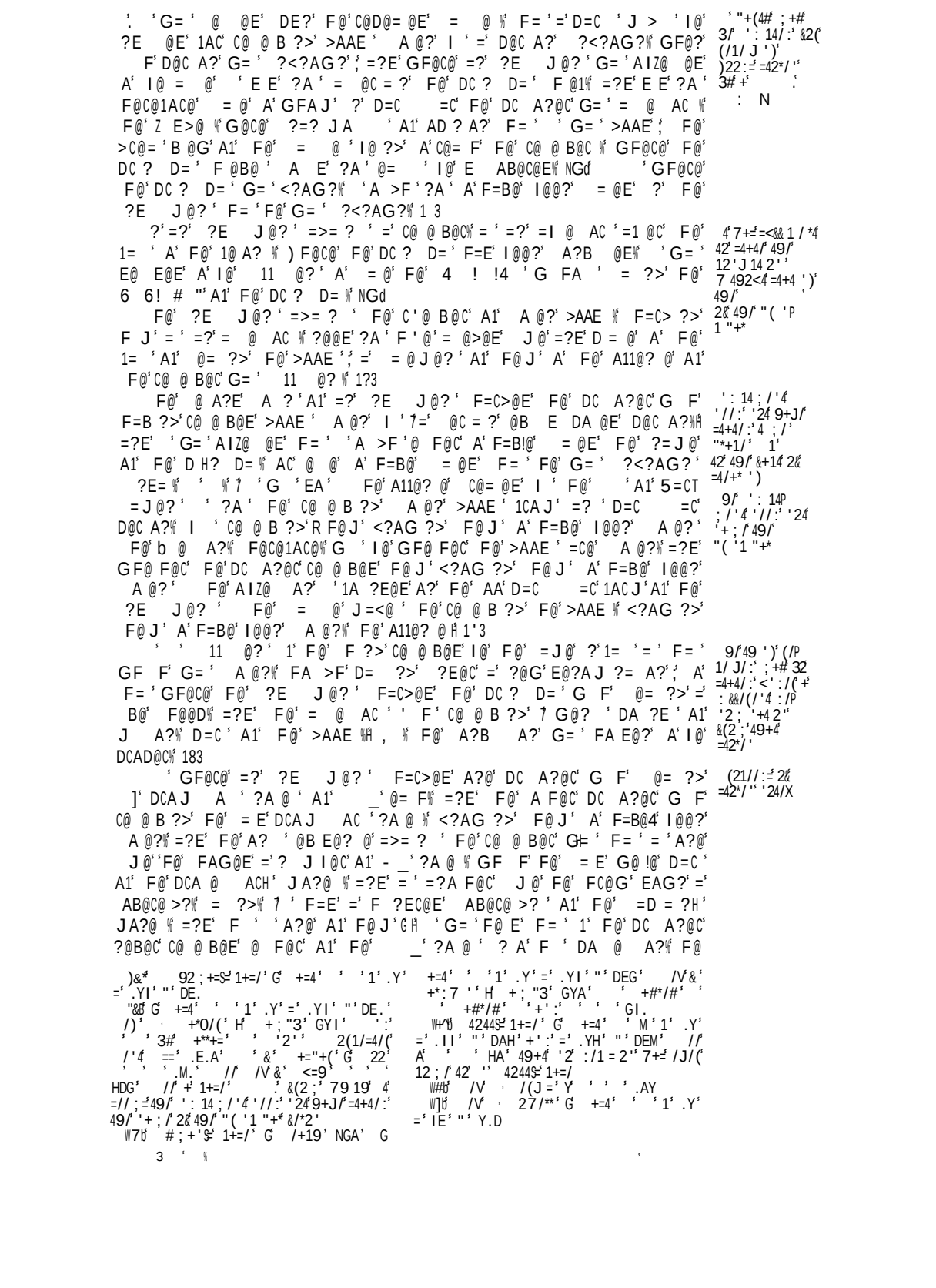
9/((/' 49/' =4/+* ')' =' '' 12<' 4#' +' :' (/1/ J ')' '' 12<' 4#' 32J49' +(/' 4(+P 3*/' '' ' +' :' 49/' =4/+* ')' +' :' (/1/ J ')' ; +#' 3/' *+ :' 42' 9+J/' 3// '' '' ' (/1/ J/(' ; +#' 3/' 4(/ :' '' +' #' 12<' 4#' K79/((/' 49/' =42*/ '' "(2P "/(4#' 9+=' 3// '' '' 49/' "2==/== / '' 2& 9 =' +)/ ' 4

DA?' =?' ?E J@? %' &F F' F=C>@E' A?@' DC A?@C' G F' @= ?>' = ' @@E ' ?') AC< F C@%' =?E' =?A F@C' G F' 1@ @ B ?>' ?' F@' =J @' A ? %' ' =DD@=C@E' F= ' F@' DCAD@C ' G= ' A @?' ?') AC< F C@' =?E' C@ @ B@E' ?' =? = F C@%' =?E' ' G= ' AIZ@ @E' F= ' F@' ?E J@? ' FA E' F=B@' = E' F@' C@ @ B ?>' ?' =? = F C@%' =?E' F@?' F=B@' ? CAT E @E' =B@C J@? ' A' F@G' F= ' F@' .' ,' 9' @A' :%' ' - %' ' 8 %' N?AG' C@D@= @Ed' =DD @E' ;' I ' * = @%' %' F@ E' F= ' F= ' @ A?' Z 1 @E' F ' J @ FAE' A1' ?E J@? %' N d

DA?' =?' ?E J@? ' ?' & F C@' 1AC' C@ @ B ?>' F@' F= 1!A1' =' 8_' ?A @' <?AG ?>' ' A' F=B@' I@@?' A @?%' ' =DD@=C@E' F= ' F@' F= 1' ?A @' G= ' DA @E' I ' =' C=E@ J =?' = ' G ?EA?' ?' & F C@' ?' =' @ @C' A' =' D@C A?' ?' C A %' =?E' A @?' ?!' ' C=? ' I ' AJ @' A?@' ?' AJ @' G= ' ?<?AG?' F@' DC A?@C' F=E' C@ @ B@E' F@' F= 1' ?A @' G F' =' > ' <?AG @E>@%' =?E' ? A @E' ' ?' =' @ @C' A' F@' I =?<' = ' G ?EA?' C@b @ ?>' D= J @?' A1' %' =?E' DA @E' F@' @ @C' = ' = F%' =?E' ' =CC B@E' G F' ' A? @? ' ?' E @' A C @' = ' G ?EA?' ;' I ' F@C@' G= ' ?A' @B E@? @ F= ' F@' F= 1' ?A @' G= ' C@ @ B@E' I ' AC' @B@C' ?' F@' DA @ A?' A1' F@' DC A?@C' ?' & F C@%' ? @ ' F@' I =?<@C ' = ' G ?EA?' A' GFA J' F@' F= 1' ?A @' F=E' I@@?' C@ J @E%' AC' F@' DA ' A11 @' @CB=? ' ?' F= ' A ? ' A E' I@' C@>=CE@E' = ' F ' =>@? %' =?E' F@ C' DA @ A?' ?' F= ' A ? ' C@= @E' = ' F ' DA @ A?' ;' =?E%' DA?' =' = @' C@ @CB@E%' ' G= ' F@ E' F= ' F@' DC A?@C' G= ' C =I @' ?' & F C@' ?E@C' @ ' ' N?AG' C@D@= @Ed' A1' F@' .' ,' 9' @A' :%' ' - ' ' G= ' D = ?' F= ' 1' F@' F=E' @ J D A @E' =' DC B= @' =>@? ' A' > B@' F@

+14<+#' 2J 12 ' =4(<14 J/' ? G' 79/((/' 49/#' +(/' : /* J/(/ :' 42' 49/' "(=2 ' /(' 3#' 49/' +<492(4#' 2&' 49/' 27 ' /(' ' ' ! Whd' ' ' ' 19 ; :4 ' HA' ' ' ' ' N.' ? ' ' ' ' ' ' .A W ' d ' ' /) '] ' +(4 ' ' .' /' ' ' ' HNE' G' ' ' NAM " B /) ' ' ' */#' G' ' ' 23' AG.

' :' = ' 1/' 49/' . .' ' .A' /4 ' 1' .MM' =' GH' 49/' ' : 14 ; /' 4' '' =<19' +'1+=/' 72<*:' 3/' =<&& 1 /' 4' &' 4' ; /(/*#' 9+:' 49/' J/ ' </' 2(0=9 (/' '' 49/' ; +() ' ' '' 7* +4' 12<' 4#' 2(' "*+1/' 49/' (/1/ J/(' ; +#' 3/' 4(/ :' =//' G.' ' GA' /4 ' 1' NY' =' NY' . " ' .YA



1 ;' =?E' <?AG ?> % =?E' 1C= E @? ' A I = ?@E' I ' 1= @' D @ @? @ '
G F' ? @? ' A' E@1C= E% G@ ' <?AG ?>' F= ' F@' >AAE ' F=E' I@@?'
A I = ?@E' I ' 1=q' @ DC@ @? @ ' G F' ? @? ' A' E@1C= E% = ' ?' F ' A ? '
I@1AC@' J @? A?@E% I ' A J ?>' A' @ ' A ' G F= ' F@' D=C =C' 1= @'
DC@ @? @ ' G@C@ ' @ E% F= ' F@' A I Z@ A?% 1'=? % ?A ' F=B ?>' I@@?'
=<@?' I@1AC@' D @=Z G= ' C@E' I ' F@' B@CE ' A1'> ' N'd

(' '

' F"!6 ` U !#

?' DCA @ A? ' 1AC' F@' &! # & 6 4"' ?' C@ @ B ?>' A @?' >AAE % DC ? D='
A?' F@' C@D@= @E' = @' - - ' @A ' ' ' 8 9 % ' G= ' @ @E' F= ' F@' 1@ A?'='G 4 '
DC ? D= ' 1@ A?% FA >F' ?A ' A?' @E' AC' D=CEA?@E% G= ' =' A J '
D@ @? ' G ?@ ' =>= ? ' F@' C@ @ B@C% 7<3
& F@C@' F@' A? ' @B E@? @' =>= ? ' F@' = @>@E' C@ @ B@C' ' F= ' A1'
F@' F @1% F@' Z E>@' G ' =EB @' F@' Z C ' A' = b % 1!3
?' = @ ' GF@C@' F@' DC ? D= ' =?E' C@ @ B@C' =C@' ZA ?@E' ?' F@' = J @' DF@' C@ @ CR'
?E J @? % =?E' C @E' A>@ F@C% F@C@' ' ?A' EA I ' F= ' F@' C@ @ B@C' J = ' A= CA '
J = ' @? @C' ? A' F@' 1 ' E@1@? @' A1' F@' DC ? D= % =?E' =B= ' F J @ 1'
A1' @B@C ' J = @C' A1' 1= ' =?E' @B@C ' DA ? ' A1' =G' @?E ?>' A' F ' D= '
= b = ' =?E' ?' = @ ' GF@C@' F@' DC ? D= ' F= ' I@@?' DC@B A '
A?B @E% FA >F' F@HC@ ACE' A1' F@' A?B A?' G ' I@' @?'
DC@ J D B@' @B E@? @' F= ' @B@ F ?>' ?' F@' 1AC J @C' DCA @@E ?>'
G= ' C >F ' =?E' DCAD@C ' C=? = @E% @ ' = ACE ?>' A' >C@= ' = FAT
C % ' ' A J D@ @? ' A' F@' C@ @ B@C' A' A? CAB@C ' F@' > ' A1' F@'
DC ? D= % =?E' A' F@G' F= ' F@' A11@? @' A1' GF F' F@' &i ' A?B @E%
E E' ?A ' = J A ? ' A' 1@ A? ' ?' F J % AC' ?A ' A' F= ' D@ @ ' A1' 1@ A? '
G F' GF F' F@' G= ' F=C>@E% 1*3
DA?' =?' ?E J @? ' 1AC' C@ @ B ?>' A @?' >AAE ' F@C@' FA E' I@' 4 "2'' +'' ' '
A J @' @B E@? @' A' F@G' F= ' F@' >AAE ' G@C@' ?' 1= ' A @?' I ' A J @'
A F@C' D@C A?% =?E' C@ @? ' DA @ A?' A1' F@' A @?' DCAD@C ' ' ?A ' =92<*:' 3/'
= A?@' 11 @? ' A' DDAC ' F' =?' ?E J @? % = ' F' DA @ A?' =2 ; /' /J : / '1/'
' @B E@? @' A1' @= ?>' =?E' ?A ' A1' C@ @ B ?>% 1D 3 G@C@44 A @C I
?' =?' ?E J @? ' 1AC' C@ @ B ?>' =' A @?' F C ' ' =DD@=C@E' EA I ' =2 ; /' 249/ (
1 ' GF@ F@C' F@' DC ? D= ' 1@ A? ' F=E' ?A ' I@@?' A J J @E' I ' @B@C= ' "/(=2 ' '
D@C A? % =?E' F@' A? ' @B E@? @' =>= ? ' F@' DC A?@C' G= ' F@' DA ' <4' +' =4+4/ '
@ A?' A1' F@' F C % =?E' =' = @ J @? ' J =E@' I ' F@C' F= ' F@' F=E' I
C@ @ B@E' ' 1CA J' =?A F@C' D@C A?' ;' ' G= ' A I Z@ @E' F= ' F@C@' G= ' ?A' F=B ?>'C@'
@B E@? @' A1' C@ @ B ?>;' @E= @% ' d ?' =' = @' A?' F@' @=C ' D=C ' 1/ J/ :' =
A1' F ' C ' F@' A? ' @B E@? @' G= ' C@ @? ' DA @ A?% =?E' F@'
A ? ' 1AC' F@' DCA @ A?' C>@E' F= ' F= ' G= ' @B E@? @' A1' C@

"38 ' ! 2*:= ; 49' IG' ' ' ' ' +=4' ' ' 3 : ' !(2=/'
NI' ' ' G' ' ' ' DI' 4' 7+=' 9/*:' " B' ' 23 '=2'' I' L' ' L' IH' '
49+4' 49/'*+')<+)/' 2& 49/' 14' 9+:' 3//'' (+44' I' L' ' L' H.A
&2**27/ :' '' ` : /=1(3 ')' 49/' 2&&/ '1/' +' :' W#d' L2=4' HYA' ; 49S' 1+=/' .' /+19'
49/((/&2(/' 49/' : /&/14' &' +' #' 7+=' 1<(/ :' 3# GEE' /V' &' <' ' ' I' ' ' ' HDD'
J/ (: 14? ' ' (+ ; 7 /**' '0 &' 49/' 79/(/' 2=+' T</4' ' 492<)9'49+4'49/' (/P
236/14 2'' 9+:' 3// '' 4+0/ '' 2'' : / (<(((/(' 2(12(.:' 2& 49/' "(' 1 "+*S' 12' J 14 2'' 2'' 9 ='
2'' ; 24 2'' 42' T<+=9' 49/' ' : 14 ; / ' 4' '+ ;' 27 '' 12' &/== 2'' 7+=' ' ' /J : / '1/'
'24' "(/"+(/ :' 42' =+# 49+4' 49/' 12<' 4' =' +)+ ' =4' 49/' +11/==2(#? 9<4' =/ /' /V' X'
)22 : ' W //' J2*' . ' '' HA b <(' /(' J2*' . ' '' .EI
W b +=*+ ; S' 1+=/' .' /+19' I .E' G W&1b /V' / '=*/#' Y' ' ' HNN'
+=4' ' ' 1' .Y' =' .YY' '' DEG' +4' /' (<' : /*S' /+=/' .' /7' . .Y' /)'
(+ ; S' 1+=/' .' /+19' I .N' '24/' W+b' G ' //(' ' ' GIM' .' J2*' ' '' .Y.
' ' G

@ B ?>I F@ E F= G= ?A FA E @ @? = A DCAB@ F= F@ DCAD@C G= ?@ F@ DA @ A?A1 AJ@ A?@ @ @ I@1AC@ =J@ A F@ DC A?@C; F@C@ F@ DC A?@C = E AJ@ A?@ ICA >F F@ F C A F@C; F= =?=EJ A?F= F=E I@@?? F@ DA @ T A?A1 AJ@ A?@ @ @ F= @B E@? @ A1 C@ @ B ?> HN_d

&49/ ': 14P ; / '4 +**/) 49+4 49/)22 := 7/(/ (/1/ J/ :' &(2 ;'+ "+(4 P 1<*+(" "/(=2' ' 4 ; <=43/ "(2J/ :' 49+4 49/# 7/((/ (/P 1/ J/ :'&(2 ;' =<19 "/(=2'

F@ DC A?@C G= ?E @E 1AC C@ @ B ?>' A @?>AAE I=?E F ' ?T E J @? = @>@E F= F@ C@ @ B@E F@ J 1CA J F@ D@C A? GFA H A@ F@ J Z =?E F= F@ D@C A? GFA A @ F@ J G= =' @C = ? E DA @E D@C A? A F@ Z CAC ?<?AG?; G=> DCAB@E F= F@ D@C A? GFA A @ F@ DCAD@C F=?E@E A I =?E F= E@ B@C@E A F@ DC A?@C ;' =?E 5=C<@I F@ E F= A?F ?E J @? G= ?@ @ =C A DCAB@ F= F@ DC A?@C C@ @ B@E '@ DCAD@C 1CA J F@ D@C A? GFA = = A @! I =?E F@ GA E ?A = AG A >A A F@ Z C A = GF@ F@C F@ D@C A? 1CA J GFA J F@ G= DCAB@E A F=B@ C@@@ B@EH G= =?' ??A @D =>@? AC ?A A1 F@ F @1I NJd A GF@C@ =?' ?E J @? F=C>@E & AA 1A !E G F @= ?>' =' >@ E ?>I =?E @G G F C@ @ B ?>' I <?AG ?>' A F=B@ I@@?' 7 A 1@ A? T A A @?= =1A H@ = E!=?E & AA 1ACE G= b @E;' 5= @ A?I F@ E F= @G A E ?A I@ A?B @E DA?' F ?E J @? I =?E F= F@ J >F I@ C @E 2'' =?A F@C ?E J @? I F=C> ?>' F J G F F=B ?>' C@ @ B@E F@ >@ E ?>I <?AG ?>' A F=B@ I@@?' A @?' I AJ@ D@C A?' ?<?AG?I B

2 &/== 2 '' 2& 49/ "('1 "+ '' 49/ "(/=/ '1/ 2& 49/ (/1/ J/(

& F@C@ F@ F @1I GFA F=E D @=E@E > I F=E =E J @E A =' A? =I @ ?' F@ DC@ @? @ A1 F@ DC A?@CI GFA G= ?E @E = =' C@ @ B@CI F= F@ F=E A @?' F@ DCAD@C I=?E F G= F@ DC ?T D= @B E@? @ A1 F@ =C @? ; CAGE@CI I @1 F A?1@ A?' A1 F@ F @1 A F@ Z C = @B E@? @ =>= ? F@ C@ @ B@CI NAd

/44/ (=3/P 47// '' 49/ "('1 "+ + ' :' (/1/ J/(' (/P &/((') 42 J+(2<4(+ '=P +14 2 '= 9/: ' <' :/(49/ 1 (' /< ; =4+ '1/= ' +: ; = 3*/

1= F@C =?E A?' G@C@ ZA ? ?E @EI F@ A?= F@ F @1I =?E F@ 1= F@C = F@ C@ @ B@C A1 = =C>@ b = A1 IAA I FA@ I =?E @= F@C F@C@ G= A? A?@ A ? =>= ? F@ A?; I GA =>= ? F@ 1= F@CI F@ A?@ 1AC C@ @ B ?>' F@ >AAE A @?' I F@ A?I F@ A F@C 1AC C@ @ B ?>' F@ >AAE A @?' I =?' @B E DA @E D@C A? F@ A?' F=E I@@?' ?' F@ DCA @ ACH @JD A 1CA J * =C F A "A B@J F@CI =?E4 F@ DC A?@C B@E A>@ F@C DC I GF@?' F@ 1= F@C C@ J AB@E A 5C@ A?I =?E AA<' =' F=J D@C G F F J I GF F D= @E =?E C@D= @E C@D@= @E I@ G@@?' F@J ? A I@C ?' F@ F A1 "AB@J I@CI F@ E= = E ?' F@ ?E J @? I =' b = A1 FA@ =?E @= F@C I@ A?> ?>' A F@ DCA @ AC I G= 1A ?E ?' F@ A?H AE> ?> I =?E ?E @ @C 1CA J F@ 1= F@C A F@ A?I F@ A? @? A1 GF F = @E F@ FAD A1 F@ 1= F@C = 5C@ A?' A I@ @=C F@E I=?E F@C@ G= = A 1A ?E DCAD@C A1 F@ DCA @ AC I A? ?>' A1 IAA I FA@ I =?E @= F@C I A1 F@ B= @ A1 8 _I =?E = A @ @C A1 F@ A?' A F@ 1= F@C F@ @ @C 1CA J F@ 1= F@C A F@ A?I =?E 1CA J F@ A?' A F@ 1= F@C G@C@ = @E A I@=C E= @ = B=C A D@C AE I@ G@@?' * = =?E AI@CI =?E A C@1@C A F@ C=? J A?' A1 >AAE A1 F@ ?= C@ A1 FA @ 1A ?E ?' F@ 1= F@CH FAD G= C>@E F= F@ @ @ C A E ?A = I@ C@=EI I F= F@ DCA @ A?' J @ @ A?@ A11@? @I =?E > B@ @B E@? @ A?' F= = A?@ G= =? G@C@E F= F@ @ @C G@C@ = @B E@? @ =>= ? F@ 1= F@C

"B /V + (+9 2(:#' !*2<1/=4/(/'4 ==' .EHG' ! "B *=72(49#S 1+=/' /7' ..D 2B /V 22*&2(:' .' 23' HEI

W2B 2V' L' L' NM' 12'P &/== 2 '' 2& 49/ "('1 "+ '' 49/ +3=/ '1/ 2& 49/ (/1/ J/(' =' 24 /J :/ '1/ +)+ '=4 49/ *+44/(' &' <('/(' .' 22' M' HID

A' F@G' > ' <?AG @ >@% =?E' - ?' B' DM> ' NDd' G= ' C@ @E' A?
* = @% % 7 ' ' C @' F= ' Z E>@ ' =C@' ?' F@' F= I ' A1' ?A ' = AG ?>'
@B@C= ' 1@ A? A ' = ' A' F@' > B@?' ?' @B E@? @' ?E@C' A?@' ?E T
J @? % GF@C@' F@' @11@ ' A1' EA ?>' A' G ' I@' A' C@= @' A?1 A?% AC'
A' ?C @' F@' DC A?@C% AC' A F@CG @' @ J I=CC= ' F@' E@1@? @ '
F@C@' @ J I=CC= J @? ' =?E' ?Z @' GA E' I@' DCAE @E' I ' D ?>'
F@' DCA @ AC ' A' F@ C' @ @ A? ' F@ ' =??A ' DA I ' <?AG' = '
GF= ' J @' F@' @B@C= ' =C @? @ ' =?E' C@ @ B ?> ' N 1' J AC@' F=?' A?@d'
AA<' D = @' ;' F@' GFA @% = ACE ?>' A' F@' AD@? ?>% @@J ' A' A? T
@' =' A? ? A ' C=? = A?' ;' F@C@1AC@' ' F= ' =E J ' F@' @B E@? @'
C@ = ?>' A' =? ' =< ?> ' =?E' C@ @ B ?> % ?E@C' F@' C J =? @ '
>>@ @E% DCAB E@E' F@' ' ?E J @? ' A? = ? ' ACC@ DA?E ?>'
F=C>@ H N d
& F@C@' DA?' =?' ?E J @? ' 1AC' C@ @ B ?>' A @?' C@ =F @' ?A @ % ++f 79/(f
F@' DC A?@CH ' A ? @ ' ?' CA @] ' ?= A?' = @ J D ' A' F@G' F= ' X] /(4=/ ; /' 4
?A' J @=? ' F=E' I@@?' =<@?' A' ?1AC J' F@' D I ' A1' F@' ? J I@C' =?E' /J +/ ' 1/(' 4
D=C =C ' A1' F@' ?A @ % =?E' F@' A ? @ ' 1AC' F@' DCA @ A?' F@?'
DCADA @E' A' C@=E' =?' =EB@C @ J @? ' 1CA J' F@' "! ! <' F"6 "' G' '
G= ' A I Z@ @E' A% ? @ ' ' A E' I@' F@G?' F= ' ' F=E' A J @' A' F@'
<?AG @E>@' A1' F@' DC A?@C' ;' I ' = @ @@% % F@ E' F= ' = ' I ' F@'
CA @] =J ?= A?' ' G= ' = @ J D @E' A' I@' F@G?' F= ' ?A' J @=? '
F=E' I@@?' =<@?' A' =DDC @' F@' D I ' F= ' =? ' ?A @ ' F=E' I@@?'
A @?% AC' > =CE' F@ J ' =>= ? ' =< ?>' F@ J % ' G= ' =E J I @' ;
=?E% DA?' =' = @' C@ @CB@E% F@' Z E>@ ' G@C@' @=C ' A1' AD ? A?% F= %
?E@C' F@' D=C =C' Z C J =? @ ' A1' F@' = @% ' G= ' DCAD@C '
C@ @ B@E% NCd
' @ ' ' A1' F@' 5C@B@? A?' A1' C J @ ' % 9. ' N d' ' ' @?= @E' 5CAA1' A' FAG'
F= ' GF@C@' DCA @@E ?> ' =C@' =<@?' =>= ? ' =? ' D@C A?' 1AC' F=B ?>'
C@ @ B@E' >AAE ' 1 3' <?AG ?>' F@ J ' A' F@' A @?% AC' 1AC' F=B ?>' ?' F '
DA @ A?' A @?' DCAD@ % @B E@? @' J = ' I@' > B@?' = ' =? ' =>@' A1'
F@' DCA @@E ?> ' F= ' F@C@' G= ' 1A ?E' ?' F@' DA @ A?' A1' F'
D@C A?' A F@C' DCAD@C ' A @?' G F ?' F@' DC@ @E ?>' D@C AE' A1' G@ B@'
J A? F % =?E ' F' @B E@? @' J = ' F@' =<@?' ? A' A? E@C= A?' 1AC' F@'
D CDA @' A1' DCAB ?>' F g ' F' D@C A?' <?@G' F@' DCAD@C ' A' F@' A @?'
GF F' 1AC J ' F@' I Z@ ' A1' F@' DCA @@E ?> ' =<@?' =>= ? ' F J
& F@C@' DCA @@E ?> ' =C@' =<@?' =>= ? ' =? ' D@C A?' 1AC' F=B ?>' C@T
@ B@E' >AAE ' <?AG ?>' F@ J ' A' F@' A @?% A1' 1AC' F=B ?>' ?' F ' DA T
@ A?' A @?' DCAD@C % =?E' @B E@? @' F= ' I@@?' > B@?' F= ' F@' A @?'
DCAD@C ' F= ' I@@?' 1A ?E' ?' F ' DA @ A?% F@?' 1' F' D@C A?' F= '
G F ?' 1 B@' @=C ' J J @E = @ ' DC@ @E ?>' I@@?' A?B @E' A1' =? '
A11@? @' ?BA B ?>' 1C= E' AC' E FA?@ % @B E@? @' A1' F' DC@B A '
A?B A?' J = ' I@' > B@?' = ' =? ' =>@' A1' F@' DCA @@E ?> % =?E' J = '
I@' =<@?' ? A' A? E@C= A?' 1AC' F@' D CDA @' A1' DCAB ?>' F=1' F@'
D@C A?' = @E' <?@G' F@' DCAD@C ' GF F' G= ' DCAB@E' A' I@' ?' F ' DA T
@ A?' 4' F=B@' I@@?' A @?' ;1>3' DCAB E@E' F= ' ?A ' @ ' F=?' @B@?'
E= H ?A @% ?' G C ?>' F= ' F=B@' I@@?' > B@?' A' F@' D@C A?' = @E%
F= ' DCAA1' ' ? @?E@E' A' I@' > B@?' A1' F' DC@B A ' A?B A?' $
=?E' ' F= ' ?A ' I@' ?@ @ = ' 1AC' 1F@' D CDA @ ' A1' F ' @ A?' A'
F=C>@' ?' F@' ?E J @? ' F@' DC@B A ' pA?B A?' A1' F@' D@C A?' A'
= @E%

W"B J .' "' IEH' "B 4' 7+=' :2<34/ :' 79/49/(' 3+ 'O ' 24/=
W% /)' ' '*/#' G ' ' 23' -)' 7/(/')22 :=' 7 49 '' 49/' = ; *+(=/14 2 '' 2&
W(B ' ' #=/' ' ' ' ' ' G.E' HG' ' HH' /4' 1' NN' //' ' X' +' J22 :
/f' 49 =' 1+=/' ' "' GGY' .' 2V' ' ' HEE' "/(/+4 ')'
" B HI' ' HA' /4' 1' ..G') * //' ' &' +J = ' HN' ' ' ' ' .HI

@1AC@' ' ' ' @@J ' F= ' ?' ACE@C' A' F@G' > ' <?AG @E>@' A F@C' ? =? @ ' A1' C@ @ B ?>' >AAE ' A1' F@' DCA @ AC' 1CA J ' F@' =J@' D@C A?' J >F ' I@' DCAB@E%' NBd' I ' F= ' @B E@? @' A1' F@' C@ @ D ' A1' A F@C' A @?' >AAE ' 1CA J ' A F@C' D@C A? ' G= ' ?A ' =E J I @%' NGd

<# ')')22:-' <' :/(J+*</ F@' ?@ @ =C ' @B E@? @' A1' F@' A11@?E@C' <?AG ?>' F@' >AAE ' GF F' F@' F= ' C@ @ B@E' A' F=B@' I@@?' AC > ?= ' A @?' J = ' I@' A @ @E' 1CA J ' F@' C J =? @ ' A1' F@' D=C =C' = @',' =?E' ' ' = E%' F= ' F@' I ?>' >AAE ' = ' =?' ?E@C' B= @' ' DC@ J D B@' @B E@? @' F= ' F@' I @C' <?@G' F@ ' G@C@' A @?%' N d

/* /&' 49+4)22:-' +(/' =42*/ '" -' =<&& P 1 / '4 ?' =?' ?E J @? ' 1AC' C@ @ B ?>' 1A @?' @=E%' C= J G@ %' %' A E' F@' Z C ' F= ' 7 F4@' <?AG @E>@' F=C>@E' ?' F@' ?E J @?' ?@@E' ?A ' I@' F' <?AG @E>@' = ' GA E' I@' = b C@E' 1' Fb' DC A?@C' F=E' = T = ' @@?' F@' @=E' A @?',' ' ' 11 @?' 1' A ' F ?<' F@' C J T =? @ ' = A J D=? ?>' F@' C=? = A?' G@C@' F' = ' A' J =<@' F@' DC A?@C' I@ @L@' F= ' ' F=E' I @ ' ' A @? H7'3' ;

/// J ')')22:-' &(2 ;' +' 32# 792' 9+:' 3// '" -' 49/' =/(J 1/' 24' 49/' ' 27 '/(' +' :' 7+-' '24' 0'27 '' 42' 9+J/' */&4' 4 & F@C@' A?' =?' ?E J @? ' 1AC' C I @ B ?>' F@' B@C' AD ' A1' =' GF D' =?E' A1' GA' G= < ?> < %' =' IA ' F=E' I@@?' A?B @E' A1' @= ?>' F@ J %' =?E' F@' DC A?@C%' =' >@?@C= ' E@= @C%' F=E' DCAB@E' A?' F@' C = ' A1' F@' IA ' F= ' F@' >=B@' FC@@' F ?> ' 1AC' F@' =C @ %!=?E' F= ' F@' IA ' = E' F@' >A ' F@ J ' 1CA J ' F@' A= F J =?' A1' ' ;' I ' '=DD@=C@E' F= ' F@' IA ' F=E' I@@?' ?' F@' @CB @' A1' %' GFA @' J =?' F=E' @?' F J ' C@D@= @E ' A' F@' DC A?@C' G F' =C @ ' A1' = ' B@C ' B=C @E' F=C= @C' A' @ %' =?E' F= ' A?' F@' 1 C ' A = A?' F@' DC A?@C' = <@E' F J ' GFA' F@' G= %' =?E' F=E' =' ?A @' A1' ? CAE A?' 1CA J ' ' AC' F ' J =?%' =?E' F@' IA ' F=E' ?@B@C' A E' F@' DC A?@C' F= ' F@' F=E' @1 ' F@' @CB @' A1' %' I ' = E' F= ' F@' DC A?@C' A? ' >=B@' F J ' @B@? @@?' D@? @' 1AC F@' =C @ %' F@' B= @' A1' GF F' G= ' = @E' A' I @' FC@@' J @ ' F@' J ' F@' DC A?@C' = E' F@' >=B@' 1AC' F@ J ',' * =C ?%' %' A E' F@' Z C ' F= ' 1' F@ ' FA >F ' F@' DC A?@C' E E' ?A ' <?AG' F= ' F@' IA ' F=E' @1 ' H' @CB @%' F@ ' FA E' = b ' F J ' N d

J :/ '1/' 42 "(2J/')< *4# 0 '27*/ :)/ DA?' %=?' ?E J @? ' 1AC' C@ @ B ?>' A @?' ?' ' G= ' F@ E' F= ' @B E@? @' J >F ' I@' > B@?' F= ' GF@?' F@' A? =I @' G@? ' A' @=C F' F@' DC A?@CH ' G=C@FA @' 1AC' A @?' CA?%' F@' =G' F@' DC A?@C' @?E@=T BA C ?>' A' A? @= ' A J @' IC= ' ?' AJ @' =?E%' =?E' F= ' =1 @C' F@' G= ' =<@?' =G= ' ?' AE %' F ' G 1@' =CC @E' AJ ' ?' ?E@C' F@C' A=<' 1CA J ' =' G=C@FA @' A?' F@' DC@J @ %' N=d' ?' F@' =J @' = @' ' G= ' F@ E' F= ' GF= ' F@' DC A?@C' = E' A' F@' A? =I @' ?A ' A? ' C@ = ?>' A' F@' ?' GF F' G= ' A @?%' =?E' 1AC' GF F' F@' A? =I @' G= ' ?A ' @=C F ?>%' I ' = A' C@ = ?>' A' F@' CA?' 1AC' GF F' F@' G= ' @=C F ?>%' G= ' =E J I @' ?' @B E@? @%' 763

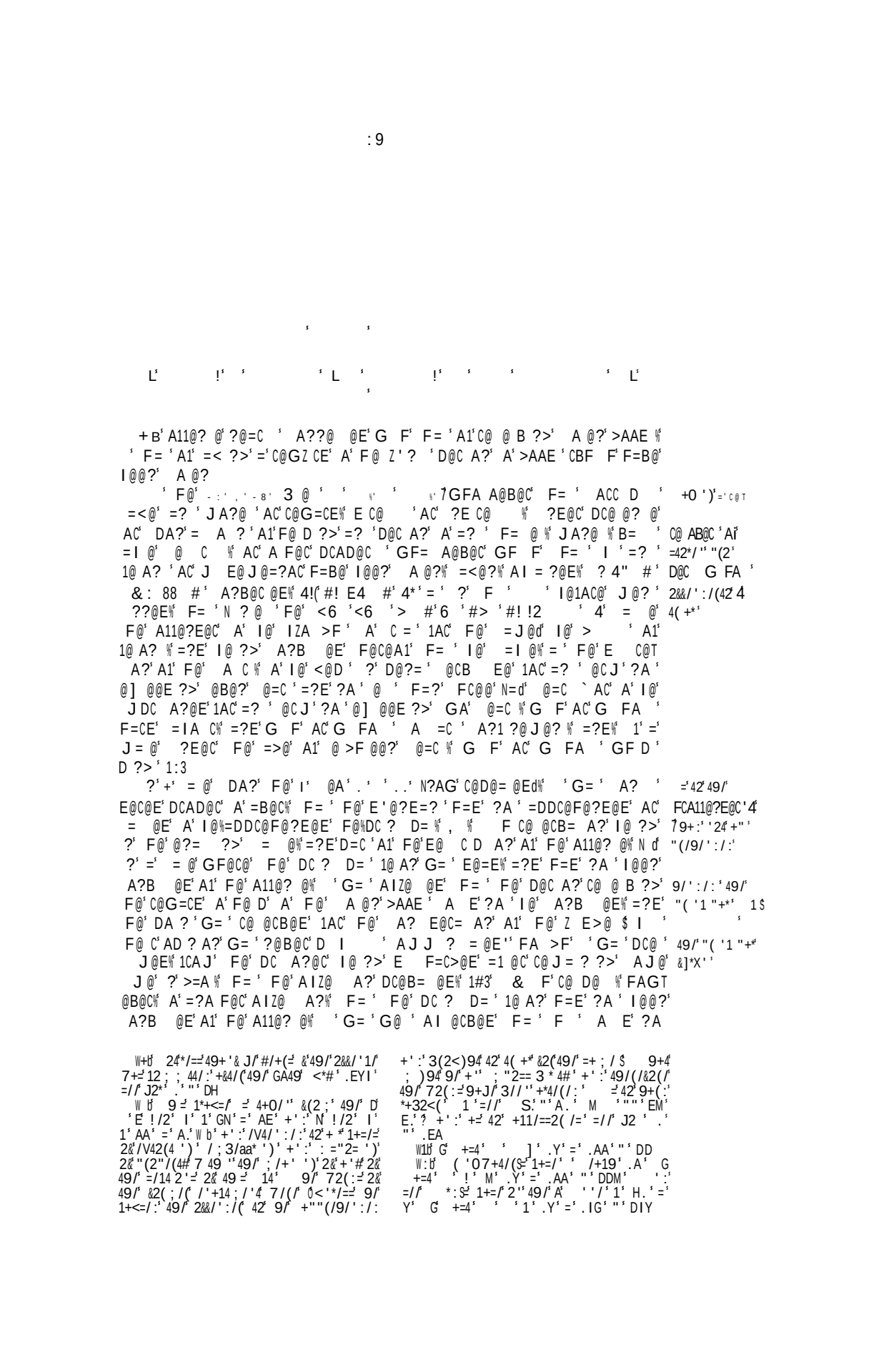
L (=4' 12<' '4 19+()/ :' 49/' "(=2' /(' 7 49' =4/+* ')' +' "(2P ; ==2(#' 24/? G' :' +' 3+' 'O' '24/? H(: ' 7 49' (/1/ J ')' 49/')22:-' 0=2 +-' +&2(/=+ :' &/*2' 2<=*#' =42*/ ' 'm' J/(F@' 1 C ' A ? ' F=C>@E' ' C=EEA <' G F' @= ?>' =' DCA J AC ' ?A @' 1AC' ' 1CA J ' F@' D@C A?' A1' (' =CB@ ' ;' F@' @ A?E' A ? ' G F' @= ?>' =' I =?<' ?A @' 1AC' _' 1CA J ' F@' D@C A?' A1' F@' = E' (' =CB@ ;' =?E' F@' = ' A ? ' G F' 1@ A? A ' C@ @ B ?>' 7 F@' >AAE ' =?E' F= @ ' =1AC@ = E%' 4' 6 ' 6*4" 6!#'* 4 !4 ' ' 4 j' F@' Z C ' 1A ?E' F@' DC A?@C' ?A ' > ' DA?' F@' GA' 1 C ' A ? %' I ' > ' A1' C@ @ BT ?>' ?E@C' F@' F CE' A ? ',' =?E%' DA?' =' = @' C@ @CB@E%' ' G= ' A?T @?E@E' F= ' F@' Z E> J @? ' A >F ' A' I @' =CC@ @E%' I@ = @' F@' GACE ' 7 A' = ' =1AC@ = E' H G@C@' E@ C D B@%' =?E' J @=?' 7 A @?' I ' ' C=E

"&B ' K' <' ' ' .' 22' ' ' .IY' =' .AH' "' DYA ' +7/=' Y' M' ' ' .DD' ? ' &' WGd' /)' ' 9 4/' .' L' ' L' YYA 192**=' .' L' ' L' Y. "V' /)' e' 22:' .' L' ' L' IND W7' ' &' : :#' GM' D #' ' ' .NE' " B' /)' ' +' =& /*:' ' ' ' .IM' G' /' ' M' M' GYI 2*/(:)/' "OB' .' +*/' Y.N' K G +=4' ' ' ' .Y

EA <' =1AC@ = E n' - ?' B' & *4"# ' 1<3 5A A <% ' % 7 F@' : /4' '24)< *4# @B@C=' A ? ' =C@' GFA ' ?E@D@?E@? ' A1'@= F' A F@C ' F@' 1= ' A1' 2 '' 47Z & (=4 F@' DC A?@C' F=B ?>' I@@?' = b @E' A?' F@' GA' 1 C ' A ? ' F= ' ?A' 12< ' 4=' + ' :' I@=C ?>%'GF= @B@C' A?' F@' F=C>@' A? = ?@E' ?' F@' F E% =?E' ')< *4# 49 (:' /*: ' =??A ' I@' @E' = ' @B E@? @' A?' F= ' A ?' @ F@C'1AC'AC'=>= ? ' F J ' 49+4 49/' 6<:)P F= ' = @' =?E ' AC'1= ' A?' 'AG?' J @C ' 1' ' J ' J @=?' F@' ; / ' 4 2<)94 >AAE ' A' A @?' I ' ' C=EEA <% ' 1' ! ' " ((>&' 6 > "#' =' J =?' '24 42 3/' +(P =?' 'DA I ' I@' =' 1@ @ B@C' A1' >AAE ' A @?' I ' F J @ 1% GF F' F@' (/=4/ : ' 2 '' 49/' @=C ' J = ' I@% F@?' F@C@' '?A' AIZ@ A?' A' F ' ?E J @? ' A?') (2<' :' 49+4 1= @' F@' AIZ@ A?% I@ ?>' 'C@C@ ' @ F? = % J = ' I@' J @ ' I ' =?' 49/(/' 7+=' +' =? G@C'@b = ' @ F? = ' J ?>' F@' A ? ' a = @>@' F@' >AAE ' (/"<) '+ ' 1# A' F=B@' I@@?' A @?' I ' F@' = E' ' C=EEA <% F@?' =1 @C' B@CE ' G@' '' 49/' J/(: 14 J ' = J @' F= ' F' = @>= A?' G= ' DCAB@E ' ' b @' J J =T @C = ' F= ' F@C@' J = ' @@J' A' I@=' A? C=E A?' A?' F@' 1= @' A1' F@' C@ ACE' AG ?>' A' F@' = b = ' A?' '@' A F@C' A ? H 7 F@' A C ' =C@' = ' A1' AD ? A?' F= ' F@' Z E> J @? 'R >F ' ?A ' A' I@' =CC@ @E ' 1' G@' FA E' F= ' F@' GACE ' J ' I@' A? C @ ' = ' ' >>@ @E% F@?' =1 @C' B@CE ' ' J ' I@' =<@?' F= ' F' =' @= ?>' G= ' DCAB@E ; 1% A?' F@' A F@C' F=?E% = ' AJ @' A1' F@' A C ' F ?<% F@' GACE ' ?@@E' ?A ' I@' A? C @E' A' = ' A' C@= @' F' @@J ?>' C@D >?=? % F@' AIZ@ A?' ' GFA '>CA ?E @ % 1 3 A' GF@C@' =' DC A?@C' G= ' F=C>@E% ?' F@' 1 C ' A ?' G F' @= ?>' G@? ' =CE ' A1' G@@E% =?E' ?' F@' @ A?E' A ? ' G F' C@ @ B ?>' F@' >AAE ' =?E' F= @ ' =1AC@ = E' 7 A' = ' =1AC@T = E' 1@ A? A ' A @?%H =?E' = b @E' A?' F@' 1 C ' A ? % I ' A?T B @E' A?' F@' @ A?E ; q ' G= ' A? @?E@E' F= ' F@' A?B A?' A E' ?A ' I@' = ?@E% I@ = @' =' D@C A?' =??A ' I@' = E' A' F=B@' 1@ A? T A 'C@ @ B@E' >AAE ' A @?' I ' F J @ 1 ; I ' ' G= ' F@ E% A?' =' = @' C@ @CB@E% F= ' 7 A' = ' =1AC@ = E' 1@ A? A ' A @?%H J >F ' I@' A?T C @E' A' J @=?' J D ' 7 A @?' >AAE %H =?E' F@C@1AC@' F' >AAE ' = ' Y F@' DC A?@C' J >F ' I@' A?B @E' A1'C@ @ B ?> H N_d

?' ?E J @? ' F=C>@E' FC@@' DC A?@C ' G F' @= ?>' =' =CD@ ' I=>' =?E' =' ? J I@C' A1'=C @ ' F@C@ ?' A? = ?@E% =?E' GA' A F@C' DC T A?@C ' G F' C@ @ B ?>' @D=C= @ ' @C = ?' A1' F@' >AAE ' A' A @?' = ' =1AC@ = E% =?E' F@C@' G@C@' GA' A F@C' A ? % @= F' A1' F@ J ' F=C> ?>' A?@' A1' F@' GA' = 1 =@? A?@E' DC A?@C ' G F' =' I =? = ' 1@ A? ' ?' @D=C= @ ' C@ @ B ?>' DAC A? ' A1' F@' = J @' >AAE % =?E' F@' Z C ' = b @E' F@' FC@@' DC ? D= % I ' 1A ?E' F@' C@ @ B@C ' > Z ' ; ' G= ' JAB@E% ?' =CC@ ' A1' Z E> J @? % F= ' F@' DC ? D= ' F=B ?>[I@@?' = b @E% ?A' Z E> J @? ' A E' I@' > B@?' =>= ? ' F@' C@ @ B@C ; F= ' =' =C @? ' AJ J @E' I ' =?A F@C' D@C A?' A E' ?A ' I@' > B@?' ?' @B T E@? @' DA?' F ' ?E J @? ; =?E' = FA >F' =' A ? ' 1AC' =' I =?T B@' 1@ A? ' J >F ' I@' ? @C @E% F' A ? ' G= ' A? ' ? CAE @E' A' DC@B@? ' =?' = b = % 1' ' C?@E' A ' F= ' F@' DCAD@C ' G= ' C@T @ B@E' 1CA J ' AJ @' A F@C' D@C A?% I ' ' F@' DC ? D= ' J ' I@' DCAB@E' A' F=B@' AJ J @E' F@' 1@ A? ' ; I ' F@' AIZ@ A?' G= ' AB@CT C @E% =?E' Z E> J @? ' > B@?' =>= ? ' F@' C@ @ B@C % N d

" B ')94 ; + ' ' ' 0 (/492=/' W : b /) ' . ' < ' 4*/# ' /** M ' ' GHE' 2(:' ' /1/==+(*# : /=1("4 J/' 2& ' 49/' 4' =' 1*/+(+' "/(=2 '' ; +# =4/+*' 9+ ' :' '1 : / ' 4=' 2& 49/' =4/+* ')' =4+4/ :' '' 49/' 2J/(' 42' + ' 249/(' +' :' +&4/(7+(:' =' (/1/ J/' 24* /(' 12<' 4=' ^ /1+<=/ ' &' 49/ # +(/' 1+"P &(2 ; ' 9 ; ' +) + ' ' +' .:' =2' 3/' 3249' +' "(' P +3*/' 2& 3/ ') ' 12 ' =4(+/ :' =2' +=' 42' +J2 :' +' 1 "+*' +' :' +' (/1/ J/(' 6<=4' +=' +' "/(=2 '' ; +# (/"<) '+ ' 1# ' 49/' 2<(4 7 ** J/' 49/ ; ' +' 3/' +' '' +11/=2(# 3/&2(/' 49/' &+14 '+ ' :' +&4/(P 12 ' =4(<14 2 '' 79 19' 7 ** =<" "2(4 49/' ' ' 7+(:' =' (/1/ J/' 49/')22 :' =' 0 ' 27 ') ' 49/ ; ' 42' : 14 ; / ' 4 ' (+49/(' 49+ '' 2 ' /' 79 19' 7 ** 9+J/' 3// '' =42*/ ' ' /' /) ' & ' <)9/=' J 4 +4/' 4 ' S /** ' ' GIG' J2* ' . ' " ' .DA W1& /) ' . ' (+: : 210 ' G' / ' ' ' M ' H. W1& ' &' L<*9+ ; ' N' ' ' ' EM



F=B@ I@@= F@ >CA ?E A1 F@ DC A?@CH E F=C>@ ?= J F = F@ = @ F F@ B@C @CJ A1 DC@ E@E F@ DDA A? A1 = A?T B A? A1 F@ DC ? D= !I@ ?>= ?@ @ =C DC@ J ?=C A F@ C = =?E D ? FJ@? A1 F@ A 1@?E@C ; 1AC = @E F= F@ A11@?E@C FA E I@ > A1 1@ A? , 7 ? @ F@ E E =DDC@F@?E AC 6> 4 < 6EE" < # # F@ 1@ A? GFA A @ F@ >AAE =?E = @ F 1@ A? A I@ ICA >F A I C = 1AC F@ =J@ 6 #2! !# 626! <!& ?E G = F@C@1AC@ >>@ @E F= F@ C @ >CA ?E A1 F@ EA I G= F= I F@ E@= F A1 F@ DC ? D= F@ !E> 6 # 4 #!!4 <6#: 4& !&E4 !: 4 : E "*4"& #G F A =? E@1= A1 F@ E@1@?E=? N@d

9 "(1 "+ &/*2 ; +# 3 + 7 4 /=+ +)+ =4 49 "+(4# : 14/ : &2(4+0)49- (/7+(:

F@C@ = = @ GF@C@ F@ DC ? D= 1@ A? G= =E J @E = = G T ?@ =>= ? F@ D=C ?E @E 1AC =< ?> F@ C@G=CE ; ?=J @ F@ = @ A1 F@ ?A AC A A?= F=?& E GFA @ @] @? B@ C=11 ?F@ =< ?> A1 F C@G=CE E ?A DC@ @?E F= F@ F=E =?E DC@ @?E F= F@ F=E ?A DAG@C A =DDC@F@?E F@ 1@ A? =?E FA >F F@ >AAE G@C@ ?@B@C C@ AC@E =?E F@ DC A?@C F=E ?A DAG@C A C@ AC@ F@J 123

&+ "/(=2 0 27 49 "/(P =2 =+ 792 9+J =42*/ ' +'# "(2"/(4#' +' :' (/1/ J +=< ; :' 2& ;2 /# 42 "<(19+= <=19 "(2"/(4# &(2 ; 49 /J/=' 24 ; /+')' 42 3( )' 49/ ; ' 42 6<=4 1/ ' 9 = 7 49 ' E !/2' I 1 GN =' AE +*492<)9 49 6<(# & ' :' 49+4 : :' '24 ; /+ ' 42 =1(// ' 49 49 /J/= 2(42 =9+(/ 49 ; 2 ' /# 7 49 49/ ; ' +' : [: :' '24 ; /+ ' 42 '= =4 49 49 /J/= ') /44 ')' (:' 2& 49 "(2"/(4# 3# "(21<(')' 49 "(2=/1<4(V 42 3<# 4

F=B@ I@@= F@ >CA ?E A1 F@ DC A?@CH E F=C>@ ?= J F = F@ = @ F F@ B@C @CJ A1 DC@ E@E F@ DDA A? A1 = A?T B A? A1 F@ DC ? D= !I@ ?>= ?@ @ =C DC@ J ?=C A F@ C = =?E D ? FJ@? A1 F@ A 1@?E@C ; 1AC = @E F= F@ A11@?E@C FA E I@ > A1 1@ A? , 7 ? @ F@ E E =DDC@F@?E AC 6> 4 < 6EE" < # # F@ 1@ A? GFA A @ F@ >AAE =?E = @ F 1@ A? A I@ ICA >F A I C = 1AC F@ =J@ 6 #2! !# 626! <!& ?E G = F@C@1AC@ >>@ @E F= F@ C @ >CA ?E A1 F@ EA I G= F= I F@ E@= F A1 F@ DC ? D= F@ !E> 6 # 4 #!!4 <6#: 4& !&E4 !: 4 : E "*4"& #G F A =? E@1= A1 F@ E@1@?E=? N@d

F@C@ = = @ GF@C@ F@ DC ? D= 1@ A? G= =E J @E = = G T ?@ =>= ? F@ D=C ?E @E 1AC =< ?> F@ C@G=CE ; ?=J @ F@ = @ A1 F@ ?A AC A A?= F=?& E GFA @ @] @? B@ C=11 ?F@ =< ?> A1 F C@G=CE E ?A DC@ @?E F= F@ F=E ?A DAG@C A =DDC@F@?E F@ 1@ A? =?E FA >F F@ >AAE G@C@ ?@B@C C@ AC@E =?E F@ DC A?@C F=E ?A DAG@C A C@ AC@ F@J 123

F@ DC A?@C G= ?E @E 1AC C@ @ B ?> 1CAJ C @ @C = ? C@G=CE ?E@C DC@ @? @ A1 F@ D ?> F@C A @C = ? F@@ @ GF F F=E I@1AC@ I@@? A @? F@ ?A F=B ?> = @E F@ D@C A? I GFAJ F@ F@@ @ G@C@ A @? A I@ =DDC@F@?E@E F@ DCA @ C] F=E F=E F@C FA @ ICA<@? AD@? =?E 1A C @@? F@@ @ A @? F@ DC A?@C GFA G= =C=E@ J =? @JD A @E I F@ DCA @ C] = ? F@ A C @ A1 F ? I ?@ =?E A E F@C F= F@ F=E AJ@ D A? A1 F@ D@C A? GFA F=E ICA<@? AD@? F@C FA @ ! @ DCAT DA @E =?E @] @ @E =D =? I GF F F@ ICA >F A F@C FA @ F@ D@C ? GFAJ F@ D@ @E A1 I@ ?> A? @C?@E ? F@ CAII@C ; =?E DA? F@ DCA @ C] @@ ?> F@J F@ = A? @ C@ A>? K@E F@J = D@C A? GFA F=E I@@? ? F@C FA @ F@ E= DC@B A A F@ ? >F A? GF F F@ CAII@C G= @11@ @E F@ DC A?@C = <@E F@ DCA @T C] 1 F@ E E ?A F ?< F@ G@C@ JD = @E ? F@ CAII@C ; F@ = E! @ F@ = E 7 A EA H F@ = E I F@ J ; H A GF F F@ = @? @E ; =?E F@ >=B@ F J FC@@ DA ?E 1AC F= D CDA @ F@ DCA @ C] =G F@ DC A?@C @B@C= J @ GF@?F@ A E F@C F= F@ F@@ @ GA E J@ F@ DCA @ C] = E 7) A F=B@ >A F@ JA?@ =?E A EA?H J @=?A @?E J @ F@ F@@ @ ; H F@ = E F@ J >F F=B@ F@ JA?@ I= < GF@?@B@C F@ D @= @E FC@@ b @ A? G@C@ @1 A F@ Z C C # E F@ DC A?@C J @=? A C@@? F@ > D=C @ AC A F= H F@ JA?@ G F F@J V @ A?E # E F@ DC T A?@C < AG F@ F @B@ =?E ? @?E A = F@J ? >@ ?> C E A1 F@ F@@ @ I DCA C ?> F@ DCA @ C] A I V ?@ F@C A1 F@ =IAB@ DDA A? F@ Z C G@C@ E C@ @E F= F@ = @G= B F ?@ = @ F CE # E F@ DC A?@C <?AG F@ F @B@ =?E = F@ DCA @ C] = F@C =>@? =?E = F@C C@b @ ?@?

W/ G +=4 2 .Y =' .AA "' DDM +*+1 2 ; .HG /I +=*+ ; S 1+=/ % B I +*+1 2 ; .EG *:S W 2 '+P "' IEH 49+' 1+=/ /+19 .D '24 " B G "3 /V / : 9 44/(' +=4 1 .Y =' .AA "' DDM I DY

E@=BA C ?>' A' D C F= @' F@' F@@ @' 1CAJ' F@ J% ?A ' J @=? ?>' A' IC ?>' F@' F @B@ ' A'Z @'V A' F@'1 ! ' GA' b @ A? ' F@' Z C ' =? G@C@E' 7 " A H A' F@' F CE' 7) @ H & F@C@ DA?' F@'Z! C ' G@C@' E C@ @E' A'1 ?E' F@' DC A?@C' > %' =?E% DA?' =' = @'C@ @CB@E% F@' Z E>@ ' G@C@' A1'AD ? A?' F= %' DA?' F@'1= ' 1A ?E' I ' F@'Z C %' F@' C@ @ D ' A1' F@' JA?@ ' I ' F@' DC A?@C' G= ' =' ACC D ' C@ @ B ?>' A1' F' JA?@ ' G F ?' F@' J@=? ?>' A1' F@' = @%' F@' 1= ' 1A ?E' I@ ?>' F= ' F@' DC A?@C' <?@G' F@' F @B@ %' =?E' = @E' ?' @?E@=T BA C ?>' A' D C F= @' F@' A @?' DCAD@C '1CAJ' F@' F @B@ %' ?A ' J @=?T ?>' A' IC ?>' F@ J' A' Z @4;' =?E' F '1 ?E ?>'@ =I F@E' = ' F@' 1= '?@ @ =C ' A' A? @' F@' A11@? @' E@ C I@E4 ?' F@' = @%' 1 3 ' ?%=?' ?E J @?' 1AC' 1@ A? A ' C@ @ B ?>' _' A?' = A ?' A1' F@ D ?>!' F@' DCA @ AC' A' =' J =C@' GF F' F=E' I@@?' A @?%' G FA ' = ?>' F@' @= @C' A' I@' ICA >F ' A' C = %' ' =DD@=C@E' F= ' F@' DCA @ ACH ' A?' G@?' ' A' F@' DC A ' CH ' G F' F@' J =C@' A' = ' F J' ?' EC=G ?>' A ' J =? C@%!=?E' = ' = >F ' C=@E' A ' F@' J =C@' ?' F@' DC A?@CH ' 1 @ E% 1CAJ' GF F' F@' G= ' FAC ' =1 @CG=CE ' J @E F@' DCA @ AC' F=E' IA >F ' =' 1=C J' 1CAJ' F@' DC A?@C% =?E' F=E' D= E' D=C ' A1' F@' D C F= @' JA?@ ' A' =?' =>@? ' A' C@ C?' O ' AC' ' A1' F@' JA?@ ' E @' I ' F@' DC A?@C% =?E' F@' C@ E @' A' F@' DC A?@C ' F@' E= ' =1 @C' F@' J =C@' G= ' J @E' F@' DC A?@C' DCADA @E' A' F@' DCA @ AC% F= ' 1' F@' GA E' >@ ' F@' =>@? ' A' C@ C?' O ' AC' ' A1' F@' JA?@ ' D= E' A' F J% FC@@' AC' 1A C' A1' F@' ?@ >FIA C ' GA E' >A' =?E' 1 ?E' F@' J =C@% =?E' F= ' ? @ ' F@' J = @C' G= ' @ @E' F@' J =C@' GA E' F@' C@ JAB@E' =' E= H LZA C?@ ;' F@' DCA @ AC' DCADA @E' A' F@' DC A?@C' A' D= ' F J' ' AC' ' 1' F@' GA E' >@ ' F@' J =C@' 1AC' F J' ;' F ' F@' DC A?@C' E@ ?@E% =?E' DCADA @E' F= ' A?@' G@@?@ ' FA E' E@@ E@' FAG' J F' F@' DCA @ AC' FA E' D= ;' = ' @?> F' F@' DC A?@C' DCADA @E' A' =<@' - % GF F' F@' DCA @ AC' C@1 @E' A' > B@% I ' F@' >=B@' G@@?@ ' ' A' > B@' F@' DC A?@C% E@ C ?>' F J' A' I@' B@C ' =C@1 ' ?A ' A' D=C ' G F' F@' JA?@ ' ' F@' =G' F@' J =C@' AJ ?>' FAJ@ ' G@@?@ ' A E' F@' DC A?@C' F= ' F@' A E' ?A ' D=C ' G F' F@' JA?@ ' ' F@' J =C@' G= ' C@ C?@E% =?E' F@' J =C@' G= ' ?' 1= ' = ' FAJ@% I@1AC@' F@' >=B@' F@' JA?@ ' A' F@' DC A?@C ' ' G= ' AIZ@ @E' F= ' = ' F@' J =C@' &= ' ' J @E' I@1AC@' F@' JA?@ ' G= ' D= E' F@' @= @' G= ' ?A ' G F ?' F@' ' @A' :% ' 88% ' 8 ;' N d' I ' DA?' =' = @' C@T @CB@E' ' G= ' F@ E' F= %' = ' F@' DC A?@C' G= ' =G=C@' F@' G= ' A' > @ ' F@' JA?@ %' =?E' C@ C?' F@' J =C@' A?' F= ' = A ? %' =?E' =1 @CG=CE ' > @ ' F@' JA?@ %' ' =J @' G F ?' F@' GACE ' 7 DA?' = A ? ' A1' F@ D ?>' =? ' D@C A?' A' =? ' F= @ H "*B ?' =?' ?E J @?' A?' F@' .' ,' 9' @A' :% ' - % ' 89% 1AC' ACT C D ' C@ @ B ?>' JA?@ ' 1CAJ' ' =I ?' ?E@C' DC@ @? @' A1' F@ D ?>' F J' A' =' G= F' GF F' F=E' I@@?' A @?' 1 HAJ' F J% =I ?' DCAB@E' F= ' F@' G= ' CAII@E' A1' F ' G= F% =?E' J @? A?@E' F@' CAII@C ' ?' F@' DC@ @? @' A1' F@' DC A?@C' =?E' A F@C % =?E' A11@C@E' 1 B@' F ?> ' A' =? ' A?@' GFA' GA E' C@ AB@C' ' 1AC' F J ' F@' DC A?@C' = E' F@' FA >F ' F@' A E%=?E' A?' F= ' = A ? ' AI = ?@E' =IA ' @?' F ?> ' 1CAJ' =I ?% I ' E E' ?A ' C@ AC@' F@' G= F% AC' JA?@ % AC' EA' =? T F ?>' AG=CE ' F@' DCA @ A?' A1' F@' F @1' ' G= ' C>@E' F= ' F@C@' G= ' ?A' @B E@? @' A' A??@ ' F@' DC A?@C' G F' F@' F @1% =?E

" B /)' ,' 4+=12/' :' /' ' ' IAY' MUd /)' ,' S 2' ' /**' D' 2V' ' M' G' ' ' NG HHD' //' 49 =' 1+=/' :' "' GMG' +=' 42' ' W d' 9 =' 1*+<=/' 12((/="2' :=' 7 49' 49/' 49/'*+(1/'# D' 'E' !/2' I' 1' GN' =' AE

/+' ')' 2& 4*7' 4/(;=' 012 ; 6"4$+' :' 0"(/4/'1/ $ 9+4 =' 49/' K"(2"/(T</=P 4 2 '' &2(49] Z C %

ING

8 : 3 6 N 3

F= AJ@ F @B E@? @ G= ?@ @ =C A J =<@ A F@A11@? @ ?E= F@ Z C F= 7 F@ =< ?>A1 JA?@ F@C@ ?T @?E@E C =? =A ACC D =?E E FA?@ =< ?> ?E@C 1= @ DC@ @? @ ;1AC F@GACE [DC@ @? @n ? @ 1 JD @ F= AJ@F ?>A F= I@@?EA?@G F= 1= @=?E ? @C E@ >?)A J F@C@T 1AC@I@ = 1@E F= GF@?F@ DC A?@C AA< F@ JA?@ F@ AA< E FA?@ G F AJ@ ACC D JA B@;1AC GF F J =? >CA ?E J >F I@ >>@ @E D@C A?J = I@ @B@F J @1 =D=I@A1 1?E ?>A F@F @1 =?E 1F@AI = ? F@JA?@ 1AC F= D CDA @ F@?F@ ?A > A1F A11@? @ F@C@ =C@ = AJ=? ? =? @ ?GF FF F@GA E I@> ;1 1AC ? =? @ F@ =G F@F @1 =<@ F@G= F GA E I@B@C AZZH D ?F J A G= =?E =<@ JA?@ 1AC F@ D ?>A F@ D@C A?GFA F=E I@@?CAII@E A1 F DCAD@C ? @=E A1 J J@E = @ =DDC@F@?E ?>A F@ F @1GFA @ > = F@ F=E @@?; AC =>= ?1 F@F=E =? F ?>A EA G F F@ AJJ A?A1 F@ F@1 @ 1 GA E A I@A F@CG @ F=?ACC D A C@ @ B@JA?@ 1AC F@C@ A?A1 F@DCAD@C F@ b @ A? 1AC A =C@ ` 1C GF@ F@C F@G= F G= A @?; =?E @ A?E GF@ F@C F@ DC A?@C E E =<@ F@DCA @ ACH JA?@ ?E@C= ACC D DC@ @? @ =?E?A FA?@ J@G F ?GF F F@D=C G= A = @ F@A11@?E@C A I@=DDC@F@?E@E; =?E = =? C= @F@ J F=B@ = C@= A?=I@ J@ A A EA; =?E F@C@1AC@ F@ ?E J@?G= I=E; I C @ AB@CC @E F@AIZ@ A? 1,3

: 7 " # % E 4

=1 C F@C J@=? A1D ?>= AD A F D@C? A C=11 ?A @?>AAE @?= @E I F@ -: ,4-8 3 @ -
F= 7GFA A@B@C F= D I =EB@C @= C@G=CE 1AC F@C@ C? A1 =? DCAD@C GF= A@B@C GF F F= F=B@I@@?A @?AC A =?E F= ?F =EB@C @J@? @=? GACE D CDAC ?>F= ?A b @ A?G I@ = <@E AC F= J =<@ @A1=? GACE ?=? D I =EB@C @J@? D CDAC ?>F= = C@G=CE G I@ > B@?AC D= E 1AC =? DCAD@C GF F= F=B@ I@@?A @?AC A G FA @K ?>AC J =< ?>=? ?b C =1 @C F@D@C A?DCAE ?> F DCAD@C AC F= DCAJ @AC A11@C ?= ? F D I =EB@C @J@? A C@ C?A =? D=G?ICA<@C AC A F@C D@C A?GFA J= F=B@IA >F AC =EB=? @E JA?@ I G= A1 A=?DA?=? DCAD@C A @?AC A F@ JA?@ AC C@G=CE 1AC F@C@ C?A1 F DCAD@C AC F= DC ? AC D I F=? F=EB@C @J@? F=EB@C @J@? F= 1AC1@ F@ J A1 1 1 DA ?E 1AC @B@C F A11@? @ A =? D@C A?GFA G @ 1AC F@ =J@I = A?A1E@I A I@C@ AB@C@E G F 1 A A1

HNJd

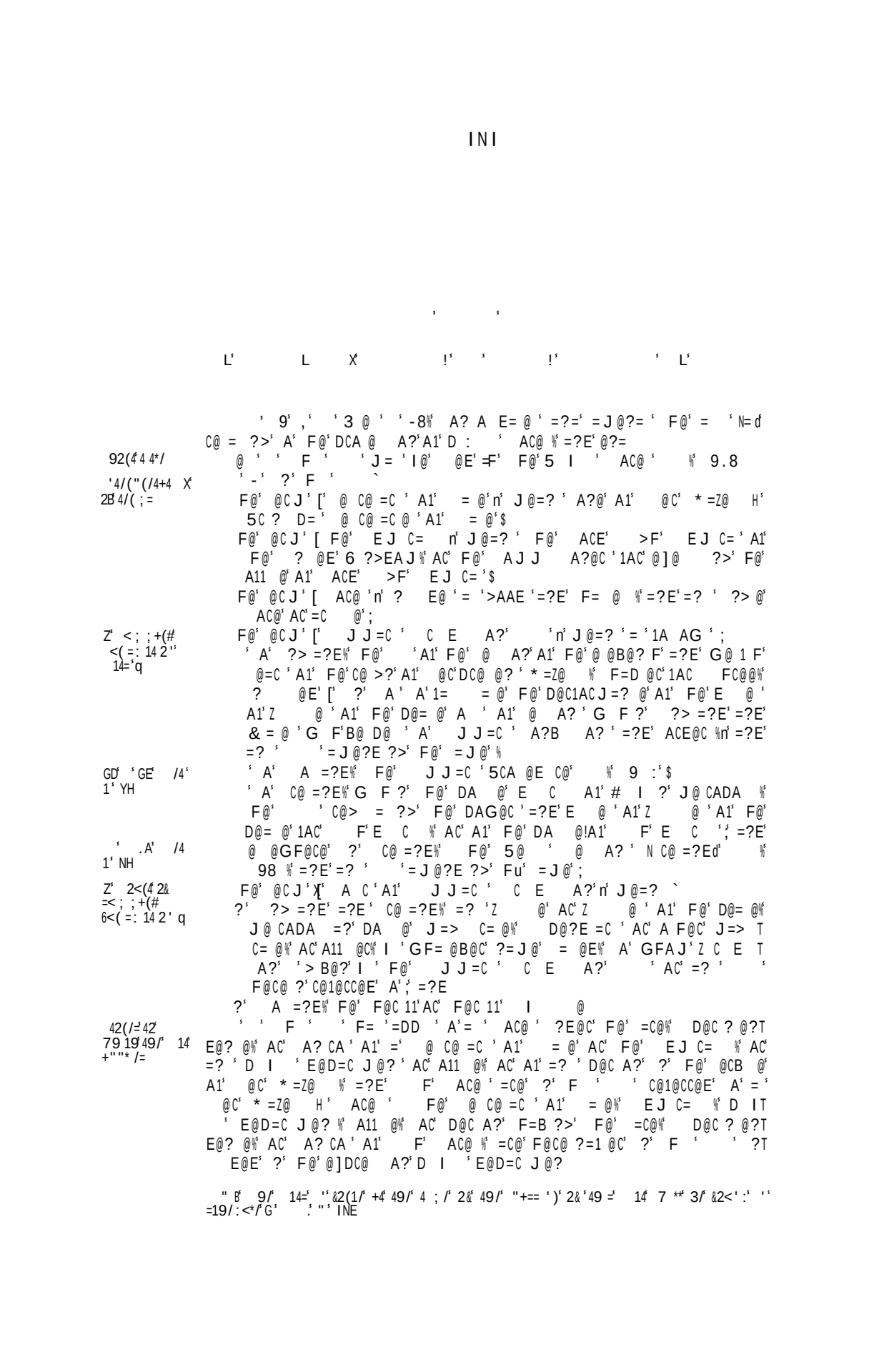
":B /) ') ' :MXV ' EY 'E !/2' I 1' GN =' AN? N !/2' I 1' AA W B /) ' 10=' :' 2V ' ' .IA =' AG? +' :E 'N /4' 1' ID =' I " B 9 = 1*+<=/ =4+0/ '" &(2 ;' 49/ D

F : S ' + + + ɀ @ & 5 5 :

D I F@C A1 =' ?@G D=D@C NRd A C@ AB@C =' 1AC1@ C@ ?E@C @ - A1 F@ =C @? 9 F= F@ ICA >F G F ?']' JA? F =1 @C F@ 1AC1@ C@ ? CC@E =?E' ?A F = A?' =>= ? F@' DC ? @C AC ; ; % #
D I F@C A1 =' ?@G D=D@C F= I@ ICA >F ? @ F@ = @? ?' GC ?>' A1 @C * =Z@ H = AC?@ >@?@C= ' AC A AC >@?@C= ' 1AC ?> =?E 1' F@ = A?' ICA >F ?' ?> =?E AC 1AC C@ =?E 1' F@ = A?' ICA >F ?' C@ =?E F= I@@?' 1 ! AI = ?@E' A' F@ IC ?> ?>' A1 F = A?

W7 '49 =' 14 49/ 4/ (; ' 0 ' /7="+"/($ &2(1/ (/*+4 ')' 4 : 49 /' 1+((+)/ 2& ' /7=P
; /+ '=' +' ' /7="+"/(+=' : /& ' / :' &2(49/' "+"/(=3# "2=4
"<("2=/=' 2& 49/ 14=' &2['49 /' 4 ; /' 3/ ')

I N I



5 + + +

: F@ J =C< E@ C I@E ?' F@ 1 C F@E @ 1:3 A F *=C<' ?' J = F@ =DD @E ?' AC A?' AC@ F@C@ ?' E@ C I@E ?' ACE@C A' E@?A @' # L' @C * = @ H DCAD@C ?' AC@ A' J =C<@E' =?E' F= F@' =G1 + 1AC =? D I E@D=C J @? =?E' F@' A? C= AC A11 @C =?E' YGAC<J@?' A1' F' E@D=C J @? A' =DD FA @' J =C< AC =? A1' F@ J ?' AC A?' =? F' AC@ =?E' 1' =? D@C A?' G FA =G1 = FAC NDCAA1' A1' GF F' = FAC F= @' A?' F@' D=C = @Ed =DD @ =? A1' FA @' J =C< ?' AC A?' =? F' AC@ F@' F= I@' > A1' =' J E@J@=?AC =?E' F= A?' A?B A?' F@C@A1' I@' =I @' A' I@' JDC A?@E' 1AC =? @CJ ?A @] @@E ?>' GA' @=C G F' AC' G FA F=CE' =IA !' 4

8 1' =? D@C D G F' ? @? A' A? @= @C * =Z@ H DCAT 3*4/(+4 2'' D@C ?' =? AC@ =<@ A E@ CA AC AI @C= @ GFA AC , 7 49 '4/'4 42 ?' D=C =? F' J =C<' =1AC@ = E AC =? J =C<' GF= A@B@C 12'1/+*;/'4 E@?A ?>' F@' DCAD@C A1' @C' * ' ?' =? AC@ F@' F= I@' > A1' 1@ A? =?E' = A?' A?B A?' F@C@A1' I@' =I @ ?' F@' E C@ A?' A1' F@' A C' I@1AC@' GF F' F@' A?B @E A' I@' <@D ?' D@?= @CB E@' 1AC! =? @CJ ?A @] @@E ?>' @B@?' @=C N d AC' A' JDC A?@E' 1AC =? @CJ ?A @] @@E ?>' GA' @=C G F' AC' G FA F=CE' =IA C 3

A? =I @' A1' F@' J @ CADA =?' DA @' 1AC @' J= G F ?' 2 7/(42 F@' J 1AC GF F' F@' A? =I @ =?E' =? A? =I @ 1' E@T =42 =<=P D @E' I =' D I E@D=C J @? J= G F ?' F@' J 1AC GF F' "/14/ :' 32+4=' F@' A? =I @ AD @=C F=?E' E@ = ?' =? B@ @ IA= AC B@F @' "/(=2 '=' 2 ?' AC A?' GF F' F@C@! '!@= A? A' D@ F= =? A1' @C' * =Z@ H' AC@ A @?' AC ? =G1 AI = ?@E' J = I@' 1A ?E AC =? D@C A?' C@= A?=I D@ @E' A1' F=B ?>' AC A?B@ ?>' ?' =? J =??@C' =? A1' @C' * =Z@ H' AC@ A @?' AC ? =G1 AI = ?@E

A? =I @' F= I@' E@@J@E' A' I@' E@D @E' I =' D I E@D=C T J @? G F ?' F@' J @=? ?>' A1' F @ A?' 1' F@' E@D @E' I =? GC ?>' >?@E' I F@' D@C A?' GFA' F@' F@=E' A1' F' E@D=C J @? AC G!FA' = FAC @E' A' >?' EA J @? A?' I@F= 1' A1' F' E@D=C T J @?

. 1' =? 'D@C A?' ICA >F I@1AC@' =' A C' A1' J J =C C J " % L' E A?' F=C>@E' G F' A?B@ ?>' AC G F' F=B ?>' ?' F DA @ A?' AC <@@D ?>' =? A1' @C' * =Z@ H' AC@ C@= A?=I D@ @E' A1' I@ ?>' A @?' AC ? =G1 AI = ?@E' =?E' EA@ ?A > B@' =?' = A ?' A' F@' = 1= A?' A1' F@' A C' FAG' F@' =J@' I F@' =I @' F@' F= I@' E@@J@E' > A1' =' J E@J@=?AC =?E' F= I@' =I @' A?' JT J =C ' A?B A?' A' =' D@?= '?A '@] @@E ?>' 1B@' DA ?E AC' ?' F@' E C@ A?' A1' F@' A C' A' I@' JDC A?@E' 1AC =? @CJ ?A @]T @@E ?>' GA' JA? F G F' AC' G FA F=CE' =IA C

F= ?A I@' =G1 1AC=? D@C! A? G FA 'D@CJ A?' ?' S # ; GC ?>' 1CAJ' =' D I E@D=C J @? AC' 1CAJ' AJ@' D@C A?' = FAC K@E' I =' D I E@D=C J @? ?' F= I@F= 1 NDCAA1' A1' GF F' D@CJ A?' q @C F= @' A?' F@' D=C = @Ed A' >= F@C' AC' @=C F' 1AC AC@ AC' A' C@@D G@@D AC EC@E>@' ?' F@' @=' AC' =? E= G= @C G F ?' A?@' F ?EC@E' =CE 1CAJ' =? B@ @ I@ A?> ?>' A' @C' * =Z@ AC' ?' @C' * =Z@ H' @CB @ AC 1CAJ' =? J AAC ?>' D = @' AC' =? FAC ?>' D = @' =DDCADC = @E' A' F' B@ @ AC 1CAJ' =? J AAC ?> I@ A?> ?>' A' @C' * =Z@ AC 1CAJ' =? A1' @C' * =Z@ H' GF=CB@ AC' EA <

W 0 /F 49F =19/ :<*/ .' "' INE W:0 9F (/"/+*/ :' / '+14 ; / '4 =' GD' 'GE W1 =' 42' "/ '+* =/(J 4<: / ' =//' J2*' .' /4' 1' N. ' =' Y "' DG

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8 'S N 5'6 & 3' ' & 3' $ % &'

B = ?>%' AC' @= J ' 1= AC ' =CE %' AC' G F ?%' A?@' FA =?E' =CE ' 1CA J ' =? ' I = @C ' AC' 1AC ' @E' 1AC' F@' DC= @' A1' =C @C ' @ F@C' I ' F@' (A = ' C @C ' AC' I ' J =' AC' BA ? @@C' =C @C %' AC' ?' AC' A?' =D ' D=C ' A1' F@' D= @ ' AC' E =? @% %' GF@ZI @C' AB@C@E' G F' G= @C' AC' ?A %' 1CA J ' C?@' A' J @' J =C<@E' A ' = ' C=?>@ ' 1AC' =C @C ' DC= @' 1AC' F@' @' A1' @C' * =Z@ H ' F D %' AC' J =C<@E' A ' =?E' =DDCADC = @E' 1AC' C=?>@ ' ?E@C' F@' DCAB A? ' A1' F@' C @C ' (=?>@ ' %' 9 -

/ ' +*4# 1' =? ' D@C A?' = ' ?' A? C=B@? A?' A1' F ' DCAB A?' F@' F= ' I@' =I @%' A?' J J =C ' A?B A?%' A' =' D@?= ' ?A ' @] @@E ?>' 1 B@' DA ?E %' AC%' ?' FE' E C@ A?' A1' F@' A C %' A' I@' J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' J A? F %' G F' AC' G FA ' F=CE' =IA C%' 1 3

/ ' +*4# 2 '' :/+*/(' I41' &2<' .' '' 6 2 - /== 2 '' 2&' =42(/=' +' :' '24 +112<' 4 ')' &2(' 49/ ;

' ' 1' AC@ ' =C@' 1A ?E' ?' F@' DA @ A?' AC' <@@D ?>' A1' =' D@C A?' I @ ?>' ?' @C' * =Z@ H ' @CB @%' AC' ?' F@' @CB @' A1' =' D I ' E@T D=C J @ ? %' AC' I @ ?>' =' E@= @C' ?Q J =C ?@' AC@ ' AC' ?' A E' J @ = %' AC' =' D=G ? I CA<@C' NG F ?' F@' J @=? Z >' A1' =? ' @?= J @ ? ' 1AC' F@' J @' I @ ?>' ?' 1AC @' C@ = ?>' A' F' E@= @CH ' AC' A' D=G ? I CA<@C d%' =?E' F@' ' =<@ ?' AC' J J A?@E' I @1AC@' =' A C ' A1' J J =C ' C E A?%' =?E' F@' A C ' @@ ' C@= A?=I @' >CA ?E ' 1AC' I @ @B ?>' F@' AC@ ' 1A ?E' A' I @' AC' A' F=B@' I @@?' @C' * =Z@ H ' DCAD@C %' F@?' 1' F' D@C A?' EA@ ' ?A ' = 1 ' F@' A C ' F= ' F@' =J @' =G1 ' I ' F@' AC@ ' A' 1A ?E%' F@' F= ' I @' =I @%' A?' J J =C ' A?B A?%' A' =' D@?= ' ?A ' @] @@E ?>' 1 B@' DA ?E '

: ; '+*' "2=P =/== 2 '' /VP "*+ ' / :

' ' AC' F@' D CDA @ ' A1' F ' ' AC@ ' F= ' I @' E@@ J @E' A' I @' ?' F@' DA @ A?' AC' <@@D ?>' A1' =? ' D@C A?' 1' F@' 7<?AG ?> ' F= ' F@ J ' ?' F@' = =' DA @ A?' AC' <@@D ?>' A1'=? ' A F@C' D@C A?%' AC' ?' =? ' FA @%' I E ?>%' AE> ?>%' =D=C J @? %' 1 @ E' AC' D = @%' AD@?' AC' @? A @E%' GF@ F@C' A D @E' I ' F J @ 1' AC' ?A %' =?E' GF@ F@C' F@' = J @' =C@' A' F=E' 1AC' F ' AG?' @' AC' I @?@1 ' AC' 1AC' F@' @' AC' I @?@1 ' A1' =?A F@C ' N M d '

2 ' J 14 2 '' 2& :/+*/(' '' /*: ' ; /4+*=

' ' ' A?B A?' ?' ?> =?E' ?E@C' =? ' DCAB A?' A1' F ' ' A1' =' E@= @C' ?' A E' J @ = ' F= %' 1AC' F@' D CDA @ ' A1' C@> = A?' =?E' ' A? @b @? @ ' ?E@C' F@' E' * @ = ' # @= @C ' %' 9 %' 123' I@' @b B= @? ' A' =' A?B A?' ?E@C' F= '

+(4=' 2& GI' ' GA' /4' 1' NY' ' 12("2(+4/ :

' - ' F@' 1A AG ?>' @ A? ' A1' F@' =C @? ' %' 9 %' =C@' F@C@ I ' ? ACDAC= @E' G F' F ' %' =?E' F= ' 1AC' F@' D CDA @ ' A1' F ' ' I @' C@=E' = ' 1' F@ ' G@C@' F@C@' C@ @?= @E%' ?= J @ %' @ A? ' ? ?@ ' @ >F ' A' A?@' F ?EC@E%' 1<3' A?@' F ?EC@E' =?E' FC@@%' 113' A?@' F ?EC@E' =?E' @B@?' A' A?@' F ?EC@E' =?E' F C @@?%' 1D3' =?E' A?@' F ?EC@E' =?E

" & 9/' (/"/+*/ :' / ' +14 ; / '4 =' GD' 'GE' 14 ' 1 ' N. ' =' .H

W b' 9/' (/"/+*/ :' / ' +14 ; / '4 +=' 42' 49 =' =' 49/' GD' 'GE' 14 ' 1 ' N. ' =' .G

"3& 9/' GI' ' GA' 14 ' 1 ' . .M

"J& /14 2 '' NE' (/*+4/=' 42' 49/' "< ' =9P ; / '4 2& "(' 1 "+*=' '' 49/' =/12 ' :' /) (/ / ' +' :' +11/==2(/=' //' 49 =' =/14 ' J2*' . ' "' . EA' /14 2 '' N ' "(2J : /=' &2(' 49/' "< ' =9 ; / '4 2& +6 : /(=' +' :' +3/442(=' 2& +' # 2&&/ '1/' "< ' =9+3*/' 2 '' =< ; ; +(# 12 ' J 1P 4 2 ' ' //' 49 =' =/14 ' J2*' H' "" / ' : V' /14 2 '' .MM' "(2J : /=' &2(' 49/' (/=4 4<4 2 '' 2& "(2"/(4# =42*/ ' ' >4/' //' 49 =' =/14 ' J2*' ' . " ' EH

W & 9 =' =/14 2 '' "(2J : /=' &2(' 49/' +"" (/P 9/ ' = 2 '' 2& 2&&/ ' : /(=' +' :' &2(' =/+(19' 7+(P (+' 4=

& 9/=/' =/14 2 ' =' (/*+4/' 42' =< ; ; +(# 12 ' J 14 2 ' =' 3/&2(/' 6<=4 1/=' +' :' 42' "(2P 1// : ')=' +) + ' =4 "/(=2 ' =' +14 ')' <' : /(' 49/' 14 ' # =/14 ' .MN' 2& GI' ' GA' 14 ' 1 ' NY' 0 '' 1+=/' +' # "/(=2 '' 12 ' J 14/ :' 2& +' # 2&&/ ' 1/' "< ' =9+3*/' <"2 '' =< ; ;+(# 12 ' J 14 2 ' ' 3# J (4<' 2& 49 =' 14' =9+** 9+J/' "+ :' 49/' =< ; ' +: 6<:) / :' 42' 3/' "+ :' 42) / 49/(' 7 49' 49/' 12=4=' <' : /(' =<19' 12 ' J 14 2 ' ' 2(' =9+** 9+J/' (/1 J/ :' ≠ (/P ; == 2 '' 49/ (/2& &(2 ; ' 49/' 1(27 ' ' 2(' &(2 ; ' 49/' *2(: * /<4/ ' +' 4' 2(' 249/(' 19 /&)2J/(' 2(' '' (/*+' : ' 2(' =9+** 9+J/' =<&&/(/ :' 49/' ; " (=2 ' : / '4 +7+(: /:' &2(' '2 ' "+#P ; / '4 49/(/2& ' 2(' 49/' ; "(=2 ' ; / '4 +:P 6<:) / :' '' 49/' & (=4 ' =4+ ' 1/ ' 2(' =9+** 9+J/' 3// '' =2' : =19+() / :' &(2 ; '9 =' 12 ' J 14 2 '' 3# +' # 6<=4 1/' +=' +&2(/=+ : ' '' /J/(# =<19' 1+=/' 9/' =9+** 3/' (/*/+=/ :' &(2 ; ' +** &<(49/(' 2(' 249/(' "(21// : ')=' &2(' 49/' =+ ; /' 1+<=/ S

1 1 @@?' A' A?@' F ?EC@E' =?E' G@? A?@%' NM d' = ' ? B@;' =?E' 1AC' F 'D CDA @' F@'@]DC@ A?'[' F ' %n'GF@C@' @E' ?' FA @' @ A? %' F= ' I@' =<@?' A' ? E@' F@' DC@ @?'

' ' F@' DCAB A? ' A1' F ' ' C@ = B@' A' F@' =< ?>' A %' E@ CA ?>%' (' AI @ = ?>' A1' J =C< %' AC' A' F@' F=B ?>' ?' DA @ T A?' AC' <@@D ?>' @C' * =Z@ H' AC@ %' F= ' ?A ' =DD ' A' AC@ ' @E' = ' C@> J @? = ' ?@ @ =C @ ' AC' A F@CG @' 1AC' =? ' A E @C%' J = J =?%' AC' BA ? @@C$ I ' ?A F ?>' F@ !@ ?' F= ' C@ @B@' =? ' D@C A?' 1CA J' =? ' AI >= A?' AC' =I ' A' GF F' F@' J = ' I@' IZ@ ' ?E@C' =? ' A F@C' ' ?' C@ D@ ' A1' =? ' F' AC@

(2J = 2 '' &2(' (/) ; / '4+# ' /1/=+(/=' ,A

' :' = @ ' FAG' DCA @@E ?> ' =C@' A' I@' =<@?' 1A ' F@' D ? F J @? ' A1' A11@? @ ' 1AC' GF F' =' D@C A?' ' =I @' ?E@C' F ' A?' J J =C ' A?B A?% =?E' 1AC' F@' C@ AB@C ' A1' D@?= @

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' 8' ? ' D@ ? =C ' D@?= ' AC' A F@C' J A?@ ' C@ AB@C@E' ?E@C' F ' ' ?' C@ = A?' A' =? ' AC@ ' F= %' ?' F' J =??@C' = ' F@' C@= C ' 1CA J' J @' A' J @' E ! %' I@' D= E' ? A' F@' C@ @ D ' A1' F@'] F@b @C% =?E' =CC @E' A' F@' A? A E= @E' ?E ;' =?E' F ' @ A?' F= ' D@C @E@' =? ' @?= J @? ' A' F@' A? C=C ' A? = ?@E' ?' =? ' ' C@ = ?>' A' J ? D= ' A CDAC= A?' AC' F@' J @ CADA =?' DA @%' AC' ?' =? ' A F@C' !

/ ' +*4 /=' 1 ' 42' 3f' "+ :' '&2' V19/T</(

' ' A F ?>' ?' F ' ' F= ' DC@B@?' =? ' D@C A?' 1CA J' I @ ?>' ?E @E' ?E@C' F ' ' (' A F@CG @' 1AC' =? ' ?E =I @' A11@? @' J =E@' D ? F=I @' A?' J J =C ' A?B A?' I ' F ' %' AC' DC@B@?' =? ' D@C A?' 1CA J' I @ ?>' =I @' ?E@C' =? ' A F@C' ' AC' A F@CG @' A' =? ' A F@C' AC' F >F@C' D@?= ' AC' D ? F J @? ' F=?' ' DCAB E@E' 1AC' =? ' A11@? @' I ' F ' %' A' F= ' ?A' D@C A?' I@' D ? F@E' G @' 1AC' F@' = J @' A11@? @

2f 42' "(/J/ '4 "/(=2 '=' 3/ ')' : 14/ :

' . ' @ A?' 1AC 1 B@' N d' A1' F@' C@@?G F' A D = ' %' 9 8%' F= ' I@' C@=E' =?E' F=B@' @11@ ' = ' 1' F ' %' ? @=E' A1' F@' " =B= ' =?E' 3 = ?>' AC@ ' %' 9 : %' G@C@' C@1@CC@E' A' ?' F= ' @ A? 9 ' F@' ' D@ 1 @E' ?' F@' @ A?E' F@E @' A' F ' ' =C@' F@C@ I ' C@D@= @E' A' F@' @] @?' ?' F@' F CE' A J ?' A1' F= ' F@E @' J @? A?@E$ 5CAB E@E' F= ' F ' C@D@= ' AC' =? F ?>' ?' F ' ' F= ' ?A ' =DD ' A' AC' ?' C@ D@ ' A1' =? ' A11@? @% = % AC' F ?>' A J J @E' AC' EA?@' I@1AC@' F@' D= ?>' A1' F ' % =B@' F= ' F ' ' F= ' =DD ' A' AC@ ' I@=C ?>' =? ' F' J =C<' AC' D=C %' A1' =' J =C<' = ' ?' F ' ' J @? A?@E% GF@ F@C' =DD @E' I@1AC@' AC' =1 @C' F@' D= ?>' A1' F '

; / ' : ; / '4 2& =/1' IA' 2& GE' ' GN 14' 1' EN

=' 42' (/"/+# 2& 14=' +' :' "+(4= 2& 14=' :' =/12 ' :' =19/ : <*/

"% B /14 2 '' A' "(2J : /=' &2(' 49/' 4(+# 2& 2&&/ ' 1/=' 12 ; ; 44/ :' 7 49 '' 49/' 6<(=: 1P 4 2 '' 2& 49/' : ; (+*4#' //' 49 =' =/14 ' J2*' . ' "' . I ' /14 2 '' . .Y' "(2J : /=' &2(' 49/' &2(; ' 2& +'' ' : 14 ; / '4 &2(' +' =<3=/P T< / '4 2&&/ ' 1/' //' J2*' . ' "' YD ' /1P 4 2 '' . .D' =4+4/=' 79/ '' 2&&/ ' : /(=' ; +# 3/' & ' /:' 2(' (/T< (/ :' 42' & ' :' =<(/4 /=' //' 49 =' =/14 ' 2*' . ' "' E. ' /14 2 '' . .E' =4+4/=' 79/ '' $ 2&&/ ' : /(' ; +# 3/' =/ ' P 4/ ' 1/ :' 4/ ' 9+(:' *+32<(' /1' J2*' . ' "' EM' /14 2 '' . .N (/*+4/=' 42' =2* 4+(# 12 '& ' /' ; / '4' +' :' 79 "" ')' //' J2*' . ' "' EM' /14 2 '' .GM (/*+4/=' 42' =< ; ; +(# "(21// :' ')=' /14 2 '' .G.' (/*+4/=' 42' 49/' 12=4=' 2& "(2=/1<4 2 '=' &2(' ; =: / ; /+ ' 2(=' //' J2*' . ' "' EN

RCJ L5' 49 =' =/14 2 '' 49/' &2** 27 ')' ; +(0' ; +# 3/' +"" * / :' '' 2(' 2 '' =42(/=' <=/ : ' 2(' 'P

4/ ' : / :' 42' 3/' <=/ : ' &2(' 49/' "< ; 2=/=' 2& ! (// ' 7 19' 2=" 4+*' 42' : / ' 24/' 9/(' +P 6/=4#S=' "(2"/(4# '' =42(/=' =2' ; +(0/ : ' ' + ; /*# ' +'' +' 192(' =<(; 2< ' 4/ :' 7 49' +' ' +J+*# 1(27 6' 7 49' 472' &*+)=' 2J/(' 49/' 1(27 ' ' +' :' 49/' */44/(' ! ' 2 '' 2 ' /' = : / ' + ' :' 49/' */44/(' ' 2 '' 49/' 249/(' = : /' ? + ' :' =42(/=' <=/ :' 2(' '4/ ' : / :' 42' 3/' =/ : ' +=' +&2(/=+ : ' =9+*# 3/' : // ; /:' ' +J+*# =42(/=' 7 49 '' 49/' ; /+ ')' 2& 9/' +J+*# +' :' 14<+*# ')' 42(/=' 14' .EYI ' +' : ' 49+4' 14' =9+*# +"" *# 49/(/42' +=' &' 49/' ; +(0' '' 49/' "(/=/ '4 =/14 2 '' : /=1(3/ :' 7/(' : /P =1(3/ :' '' 49/' =19/ : <*/' 42' 49+4' 14? +' :' 49+4' 14' =9+*# +"" *# 42' +*# =42(/=' =2' ; +(0/ :' 3&2(/' 49/' 12 ; ; / ' 1/ ; / '4 2& 49 =' 14' 3/12 ; ')' 3# J (4<' 2& 49 =' 14' 49/' "(2" / (4# 2& 9/(' +6/=4#

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A ‘ ; ‘ ‘ ‘ % ‘ " ‘
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'‘ 14‘ &2(‘ 49/‘ 3/44/(‘ "(/J/ ' 4 ')‘ 49/‘ ; 3/a*/ ; / ' 4 2&‘ =‘ +6/=4#$‘ 42(/=‘ 2&‘ +(‘ +' :‘ "(/J/ ' 4 ')‘ 9/+4= ‘ L(+<:=‘ +' :‘ 3<=/=‘ '‘ "+# ')‘ /+P ; / ' $‘ +) /=

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N‘ Y/2‘ . ‘ / ' E‘ J ‘ J ‘" ‘ S‘N# ! ‘ 3 N ‘ 8 ‘ ‘ ‘ 14‘42‘12 ' 4 ' <‘/‘49/‘=/J/(+‘ +7=‘ ‘ ‘ ‘ ‘ 4<&&=‘ 42‘3/‘ /V"2(4/ :

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HN‘ ‘ IM‘ ! /2‘ E‘ 1‘ EN

'‘ 14‘ &2(‘ 49/‘ 3/44/(‘ "(/J/ ' 4 ')‘ 49/‘ ; 3/aa*/ ; / ' 4 2&‘ =‘ +6/=4#$‘ +J+*‘ ‘ (: ' + ' 1/ ‘ + ' :‘ 14<+** ')‘ 42(/=

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AI ! /2 H 1 .AN	J J :N 3 N 1 4 &2(49/ 3/44/(/)<*+P 4 2 ' & =/J/(+* 14= "+==/ : &2(49+4 "<("2=/	/14 2 '' 4/ '
AA ! /2 H 1 .GD	, '' 14 42 (/" /+* + '' 14 2& 49/ L &4# K 49 (: /+(2& = "(/=/ ' 4 +6/=4# &2(" (/J/ ' 4 ') 49/ ; 3/aa*/ ; / ' 4 2& 42(/= ? + ' : 42 /V4/ ' : 49/ (2J = 2 ' = 2& 49/ =/J/(+* 1 - (/*+4 ') 42 = ; /=4 = +J+* U- (: ' + ' 1/ + ' : 14<+* ') 42 = 42 +** 249/(" <3* 1 42(/=	9/ 792*/ 14
HM H. /4 1 .GE	9/ +(/" +(4 ; / ' 4 42(/= 14 .EYD	9/ 792*/ 14 /VP 1/ " 4 =/14 2 ' = 2 ' / + ' : 472 ' =2 ; <19 2& =/14 2 '' 49(// += :/& ' /= Z /1P (/4+(# 2& 4+4/ &2(+(d + ' : Z =42(/= q+ ' : =/1P 4 2 ' 47/ ' 4#
HG HH /4 1 .G	9/ +J+* 42(/= 14 .EYN	9/ 792*/ 14

[

9/ +(' /" +(4 </ ' 4 42(/= 14 .EED

 3 @ -9 NGd F J = I @ @E = 7 F@ & =C # @D=C J @? AC@ 9 . H
@ - F F= ?A @] @?E A A =?E AC C@ =?E
@ 1 3 ? F F@ % @?? 7 F@ @ C@ =C A1 = @ 1AC & =C H J @=? F A?@ A1 @C * =Z@ H 5C ? D= @ C@ =C @ A1 = @ @C * =Z@ 1AC F@ J @ I @ ?>D @= @E A ? C G F F@ @= A1 F@ & =C # @D=C J @?
@ - F@ @ C@ =C A1 = @ 1AC & =C J = ? @ =?E DCA @ @ =? = A? AC DCA @@E ?> B AC C J ?= A?T @C? ?> J =C AC" ACE?=? @ AC@ AC A F@C @C * =Z@ H AC@ ?E@C F@ F=C>@ AC A? CA A1 F@ @ C@ =C A1 = @ 1AC & =C AC =? AC@ A E AC A? C= @E A I@ E@ B@C@E A AC I F@ @ C@ =C A1 = @ 1AC & =C 1AC F@ @ AC A?= A ? A1 @C * =Z@ AC F@ DC @@ A I@ D= E 1AC F@ = J @ AC =? A AC ?Z C A1 AC A =? F AC@ = 1AC@ = E =?E J = E@1@DE =? = A? AC DCA @@ET ?> A? @C? ?> =? F AC@ J = @C AC F ?> = =1AC@ = E =?E ?! @B@C F = A? AC DCA @@E ?> F@ @ C@ =C A1 = @ 1AC & =C J = I @ A E@ C I@E G FA J AC@ =?E =? F = A? AC DCA @@E ?> F= ?A I@ =11@ @E I =? F=?>@ ? F@ D@CT A? 1AC F@ J @ I @ ?> FA E ?> F@ A11 @ A1 @ C@ =C A1 = @ 1AC & =C 5CAB E@E = G= = 1A AG $

W ; b 9 14 (/" /+* / : /V1/ " 4 == . / HE HN /4 1 GA = . E S : G =2 ; <19 2& = H+ : /& ' /= 0 /1(/4+(# " IND 2& 4+4/ &2(+($ + ' : O=42(/=$ + ' : = GM WXb / '24/ W ; b +

+ +

N d' " A F ?>' F@C@ ?' F= ' =<@' =G= ' AC' = I C E>@' ?' AC' ?' C@ =T
A?' A' =? ' F' = A?% % AC' DCA @@E ?>% =? ' @>=' C >F % DC B @>@% AC' DC@CA>= B@' A1' F@' CAG?;' =?E' ?' = ' F' = A? % % =?E' DCA @@E ?> % =?E' ?' = ' J= @C ' =?E' DCA @@E ?> ' A??@ @E' F@C@G F% F@' @ C@ =C ' A1' = @' 1AC' & =C' J = ' @]@C @' =?E' @?ZA ' = ' F' C >F % DC B @>@ % =?E' DC@CA>= B@ ' = ' =C@ '1AC' F@' J @' I@ ?>' @]@C @E' =?E' @?ZA @E' ?' =? 'DCA @@E ?>' ?' =? ' A C ' A1' =G' AC' b ' I ' F@' CAG?% = ' 1' F@' CAG?' G@C@' = = ' =' D=C ' A' F' = A?% % AC' DCA @@E ?> ' 4

N- d' ' F= ' I@' =G1 '1AC' @C' * =Z@ % F@C' F@ C ' =?E' @ T AC % 1' =?E' GF@?' ' @@J ' 1 % A' DCA @@E' I ' ?1AC J=T A?' ?' F@' A C ' A1'] F@b @C% AC' I ' =? 'A F@C' CAG?' DCA @ % @>=' AC' @b =I @% ?' =? ' = @' ?' GF F' ' GA E' F=B@' I@@?' AZ?D@ @?' 1AC' @C' * =Z@ % F@C' F@ C ' AC' @ AC % A' A' DCA @@E' 1' ?Af DCAB A? ' C@ D@ ?>' DCA @E C@' F=E' I@@?' ? @C @E' ?' F ' 'NAd

J6 ' 4 ' W4"& "' 0 6 >

2 '=4(4 14 2 '' 2& 49/' &26- ; /(=4+4<4/=[' 8 ' H ' <"2 '' 49/' "+(4# 9+J ')' =42(/= '' 9 = _2-=/=' = 2'

+ DA?' F@' A? C A?' A1' F@' 1AC J @C' = @ ' ' G= ' AI @CB@E' F= ' F@' 6 ?>H ' J =C<' E@?A @E' F@' AC > ?= ' AG?@C F D% =?E' F=' F@' 4 > 'E (4 : 6 #!' G= ' FCAG?' DA?' F@' D=C ' F=B ?>' D I ' AC@ ' ?' F ' DA @ A?% A' = A ? ' = 1= AC ' 1AC' F= ' DA @ A?' = ACET ?>' A' F@' C@> = A? ' DC@ C I@E ' ' FA >F' F@' I=C@' 1= ' A1' DA @ A?' ACE ?=C ' A? E@ ' F@' D=C % ' ' AD@?' A' @]D =?=T A?' ;' =?E' F@' DC@ J D A?' =C ?>' 1CA J ' ' J = ' I@' C@I @E' I ' ! C J =? @ % 7E3

<4 49/' &+14 2& "2==/== 2 '' =' 2"/ '' 42' /VP "*+ ' +4 2 '' ? +' ' :' 49/' "(/P =< ; "4 2 '' +(= ')' &(2 ;' 4' ; +# 3/' (/P 3<44/ :' 3# 1 (' 1< ; =4+6 1/=

F ' DC ? D @' G= ' = @E' DA?' I ' A @C% % ?' =' = @' GF@C@' =' G EAG' GA J =?' G= ' ?E @E' A?' F@' ' ,' ' & ' % ' : % 1AC' F=B ?>' ?' F@C' AE ' E B@C ' D @ @ ' A1' =?B= ' J =C<@E' G F' F ' * =Z@ H' J =C<' ?' F@' J =??@C' E@ C I@E' ?' F@' % F@' ?A ' I@ ?>' =' D@C A?' @ J D A @E' I ' F@' A J J A?@C ' A1' F@' ?=B ' A' J =<@' F@' = J @' 1AC' F ' * =Z@ H' @' F@' =?B= ' G= ' DCAE @E' = ' F@' C = ' J =C<@E' = ' F= !>@E' ?' F@' ?E J @? % =?EX G%= ' DCAB@E' A' I@' A1' F= ' AC ' GF F' ' A J J A? ' J =E@' 1AC' F@' @' A1' F@' ?=B % =?E' A' F=B@' I@@?' 1A ?E' ?' F@' E@1@?E=? H' AE ' F@' E@1@?E=? ' E E' ?A ' = @ J D ' A' F@G' F= ' F@' G= ' G F ?' F@' @] @D A?' A1' F@' % = ' I@ ?>' =' D@C A?' @ J D A @E' A' J =<@' =?B= ' 1AC' F@' @' A1' F@' ?=B ' ;' ?AC' E E' F@' A11@C' A' DCAE @' =? ' @C 1 = @' 1CA J' =? ' A11 @C' A1' F@' CAG?' A F ?>' F@' A = A?' =?E' C@= A?' A1' F' =?B= ' A J ?>' ? A' F@C' DA @ A?' @C' E@1@? @' G= ' F= ' G I@?' F@C@' F=DD@?@E' A' I@' ?' F ' * =Z@ H' AC@ ' =' A? E@C=I @' b =?T ' A1' A E' = % ?A' A?>@C' 1 ' 1AC' F= ' @% ' F=E' I@@?' AJ=C ' 1AC' F@' D@C A?' ? C @E' G F' F@' AC@ ' A' J =<@' =' D I ' = @' A1' F@ J ' ?' A % =C>@C' AC' J = @C% = ' I@ ' @E' F@' D CDA @' A1' F@' I @C ;' =?E' F= ' F@' =?B= ' DCAE @E' ?' @B E@? @% GF F' F=DT D@?@E' A' F=B@' I@@?' J =E@' D' A?>' ? @% AJ @' 1AC' = I @' ?@?' =?E' AJ @' 1AC' F@@ ?>% F=E' I@@?' ?' AJ J A?' @' ?' F@' E@1@?E=? H' 1= J ' =' A? E@C=I @' J @' I@1AC@' F@C' F I=?EH ' E@= F% =?E' DA?' F ' E@= F' = J @' A' F@' E@1@?E=? ;' =?E' F=E' I@@?' @E' ?' F@' =J @' D I ' J =??@C' I ' F@C' A' F@' J @' A1' F@' DCA @ A?' F ' @B T E@? @' G= ' ADDA @E' I ' F@' A ? @ ' 1AC' F@' CAG?% GFA' ? @E

F= %' = ' F @' ' = AG ' A1' I ' A?@' @] @%' @' E@1@?E=? %' ? @ ' F@' =?' =B= 'F@C @ 1'A1' F= %' =??A 'C@ AC ' A' =? 'A F@C;' =?E' F@ ' = <@E' GF %' 1' F@' =?B= 'G= 'C@= 'IA >F 'A1' F@' AJ J A?@C %' AC' A1'D@C A? ' = ?>' ?E@C' F@J 'NGF F' ' F@'A? '@] @' DA ? @E' A ' I ' F@' = @d%'?A' @C 1 = @'A1' F= ' J = @C'G= ' =<@?' = ' F@' J @' A1' F@' D C F= @%' ? @' F@'1A C F' @ A?' A1' F@' ' =E J ' A1' F= ' @] @%'=?E' F@' @ A?E' @ A?' =E J ' A1' ?A' A F@C ' ' A @C%' %' G= ' A1' AD ? A?' F= ' FA >F' F@' = @' A1' F@' = @%' GF F' E C@ ' F@' = @' A1' F@ @' F ?> %' F=E' ?A ' DA ? @E' A ' =? ' A F@C!G= ' 1AC' ?E@J ? 1 ?>' F@' I @C' F=?' F@' @C 1 = @%'=?E' FA >F' F@' @ A?E' @ A?4' @@J @E' A'@] E@'=? 'A F@C'@] @'1AC' FA @' ?' GFA @' AE ' F@ ' FA E' I@' 1A ?E%' @ ' %' F@' CT J =? @ ' = @?E ?>' @B@C ' = @%' GF F' J >F ' @@J' A'1= 'G F ?' F@' %' A >F ' A' I@' =<@?' ? A' A? E@C= A?;' A F@CG @' =' =G' = = @E' 1AC' G @' D CDA @ ' J >F %' I ' AA' C > E' =' A? C A?' A1' %' I@' J =E@' =' F=?E J = E' A' ADDC@ A?' @' AI @CB@E' F= ' F@C@' G= ' ?A' CAA J' A' = ' F= ' F ' =?B= ' =J @' ? A' F@' DA @ A?' A1' F@' E@1@?E=? ' I '=? '= ' A1' F@C' AG?;' F= ' 'G= ' ICA >F ' ? A' 1= J ' @' ?' F@' 1@ J @' A1' F@C' F I=?E%' =?E' ' A? ? @E' A' A' F@' J @' A1' F 'E @= FG =?E' I '= ' A1' =G' ' =J @' A' F@C ' F= ' F ?> ' A1' F ' < ?E' F=E' I@@?' 1C@b @? '@]DA @E' A' D I ' = @;' =?E' FA >F' F@' 'DA ? @E' A '=?' @]D@E @? '1AC' F@' ?E@ J ? 'A1' F@' I @C %' @ %' DCAI=I %' 1@G' I @C %' @ D@ = ' GF@C@' J = ' b =? @ ' F=E' I@@?' D C F= @E' ?' A?@' = @%' F=E' @E' F@' = A?' >>@ @E' A' F@ J ' I ' F@' ' ?E' F= ' 1' F@' E@1@?E=? H ' F I=?E' C@= 'IA >F ' F ' ?@?' = ' =' D I ' = @%' I ' ?@> @ @E' A' =<@' F@' @C 1 = @%' AC' E E' ?A ' DC@ @CB@' %' 'GA E' I@' A? C=C ' A' ?= C= 'Z @%' =1 @C' F' =' @?> F' A1' J @%' A' D ? F' F@C' 1AC' F ' ?@> @ ' @%' F@C@1AC@%' FA >F ' F@' @B E@? @' > B@?' I ' F@' E@1@?E=? ' DCAD@C' A' I@' @1 ' A' F@'Z C ;' =?E' E C@ @E' F@ J ' F= ' 1% DA?' F@' GFA @' A1' F@' @B E@? @%' F@ ' G@C@' A1' AD ? A?' F= ' F@' E@1@?E=? ' = J @' A' F@' DA @ A?' A1' F@' ?@?' G FA '=? '1C= E' AC' J I@F=B A C' A?' F@C' D=C %' F@ ' FA E' = b 'F@C;' =?E' F@' G= ' = b @E%' 1 3

?' =' I @b @?' = @' A1' =?' ?1AC J = A?' DA?' F@' C@D@= @E' %' F@' ' ,' ' & ' %' : %' =?E' .' @A' -%' ' : %' ' %' ' G= ' A?T @?E@E' I ' F@' A ? @ '1AC' F@' DCA @ A?' F= ' F@' A? ' JAE@' I ' GF F' F@' E@1@?E=? %' =>= ? ' GFA J' ='DA @ A?' A1' F@' AC@ 'G= ' DCAB@E%' A E' E F=C>@' F J @ 1%' G= ' I 'DCAE ?>' F@' ?=B IA=CE' @C 1 = @' >C=? @E' = ' F@' J @' A1' F@' = @%' = ' F= 'G '' F@' A? ' @B E@? @' A1' F@' @>= 'DA @ A?' A1' F@ J ' ' ACE' 6@? A?%' '#.' = E' F= %' FA >F' ' G= ' @=C' F= ' ?' DCA @ A? ' ?E@C' F@' = @ ' ?' b @ A?' 'G= ' 11 @?' 1AC' F@' CAG?' A' DCAB@' F@' 1 ?E ?>' A1' F@' AC@ %' G F' F@' 6 ?>H ' J =C<%' ?' F@' E@1@?E=? H ' DA @ A?%' A' = ' DA?' F J ' A'= A ? '1AC' F= 'DA @ A?%' =?E' F@' J =??@C' A1' F ' AJ ?>' I ' F@J %' A' = ' A' FCAG' F@' 4 > ' DA?! F@' E@1@?E=? ' A1' DCAB ?>' F= ' F@' F=E' @>= ' I@ AJ@' DA @ @E' A1' F@ J ;' @ ' F= ' ' A E' ?A ' I@=C' =' b @ A?%' I ' F= ' F@' E@T 1@?E=? ' F=E' A F@C' J @=? ' A1' F@G ?>' F= 'F@' F=E' =G1 ' I@ AJ@' DA @ @E' A1' F@J ' F=?' I ' F@'DCAE A?' A1' F@' @C 1 = @' 1CA J' F@' ?=B IA=CE;' = %' 1AC' @]=JD @%' F@' J >F ' F@G' F= ' F@' F=E' IA >F ' F@ J '1CA J' =?A F@C' D@C A?' GFA' G= ' ?' F@' DC= @' A1' I T ?>' AC@ ' = ' F@' ?=B ' = @;' =?E' GFA%' F@C@1AC@%' J >F ' 1= C ' I@'

N d J .' ' A @C%' %' A?' F@' && @C?' C %' A ' :

+ '0=$' 1+=/ ' ' :/&/ ' :+ '4' +)+ '=4 742 ; ' 49/' "2=/== 2"' 2& =42(/ ' = "(2J/ : ' ; +# : =19+() /' 9 ; =/*& 3# 249/(/J : / '1/' 49+ '' 49+4' 2& +' ' +J# 32+(:' 1/(4 & 1+4/

8 ' N 5' 6 & 3' ' & 3' $ % &'

DC@ J @E' A' F=B@' F=E' F@' C@> =C' @C 1 = @%' F ' GFA%' GF@?' F@' A E' D=C ' A' F@' E@1@?E=? %' A E' ?A %' A? @? ' G F' F ' AG?' =1@ %' D=C ' G F' F@' @C 1 = @' F@' F=E' A I = ?@E%' A1' F ' F=B ?>' I@@?' F@' D C F= @C' A1' F@' GFA @' A ' NCd' ?E' F ' ACE F D%' =1 @C' = E ?>' A' F@' = @' ?' GF F' F ' EA C ?@' F=E' I@@?' FA E@?' F ' A @C%' ' NGFA J ' F@' DA<@' A1' = ' A?@' A1' F@' I@ ' CAG?' =G @C ' F= ' F=E' @B@C' = ' ?' & @ J ? @C F= d%' = E' F= ' 1' F@' E@1@?E=? ' A E' F@G' @ F@C' =' ?=B ' @C 1 = @%' AC' DCAB@' F@' D C F= @' A1' F@' AC@ ' J @? A?@E' ?' F@' ?1AC J = A?' 1CA J ' =? ' D@C A?' GFA' J >F ' I@' DC@ J @E' A' F='C@' I@@?' DA @ @E' A1' F@' DCAD@C' @C 1 = @%' 1CAJ' F@' C J =? @' A1' F' D@C A?' F=B ?>' 1C@b @? ' I@@?' =' D CT F= @C' = ' F' = @ %' F@' G= ' A1' AD ? A?' F= ' ' G= ' F' @B E@? @' = ' A >F ' A' ?E @' F@' Z C ' A' 1 ?E' F@' E@1@?E=? ' ?A ' > ' ?E' F@' E@1@?E=? %' = ACE ?> %' >=B@' F' @B E@? @%' =?E' G= ' = b @E%' 1 3'

/(4 & 1+4/=' 2B =42(/=' '24)(+'4/ :' 3# 49/' "(2"/(' +<492 4 /=' </=4 2 '=' +=' 42' 49/' "2==/= 2 '' 2&' =42(/=' +' :' 0 '27*/ :) /' 2&' 43/' ; +(0=' 2 '' 49/ ;

' A ? ' F=C>@E' F@' DC A?@C' G F' F=B ?>%' ?' F ' DA @ A?' =' D @ @' A1' =?B= %' @B@C= ' I A < %' ADD@C' F@= F ?>%' =?E' =' ? J I@C' A1' ?= ' =?E' A F@C' A E' J @ = ' =C @ ' A1' J = ' B= @%' J =C<@E' ?' F@' J =? ?@C' E@ C I@E' ?' F@' ' F@' DC A?@C' G= ' =' J =C ?@' AC@' E@= @C' ?' =' =C>@' G= ' A1' I ?@ %' =?E' F@' =C @ ' G@C@' 1A ?E' ?' B=C A ' D=C ' A1' F ' FAD' =?E' G=C@FA @' J]@E' D' G F' =' ? J I@C' A1' A F@C' =C @ %' GF F' E E' ?A ' =DD@=C' @B@C' A' F=B@' F=E' =' >AB@C?T J @? ' J =C<%' AC' A' F=B@' I@ A?>@E' A' F@' >AB@C? J @? ' F@' D @ @' A1' ADD@C' F@= F ?>%' GAC F' - ' 1 E %' F=E' AJ @' A' F@' G=C@FA @' EA I @E' D' ?' F@' J EE @' A1' =' I ?E @' A1' CAD@ =C?' =?E' A F@C' J= @C %' = @E' F=< ?> %' 1CA J ' =' D@C A?' GFA' F=E' @? ' F@' I ?E @' 1AC' = @' F@' DC A?@C' G= ' ?A ' DC@ @? ' GF@?' F@' I ?E @' G= ' AD@?@E%' =?E' F ' 1AC@ J =?' = @E' F= ' F@' I@ @B@E' F@' DC A?@C' F=E' ?@B@C' @@?' ' AC' F@' DC A?@C' @B E@? @' G= ' > B@?' F= ' ?' >AB@C? J @? ' = @ ' I A F' I ' F@' =E J C= ' =?E' F@' ACE?=? @%' ?= ' =?E' A F@C' D @ @ ' A1' J @ = ' A1' J = 'B= @%' =?E' I A < %' F' = ' FA @' ?' b @ A?%' G@C@' 1C@b @? ' A E%' J]@E' D' G F' A F@C' =C @ %' =?E' G FA ' =? ' @C 1 = @' I@ ?>' > B@ ' I ' F@' A?ZJ A?@C %' =?E' AJ @' @B E@? @' G= ' > B@?' F= ' F@' =?B= ' G= ' A E%' G FR' A F@C' =C @ ' 1CAJ' & AA G F' EA < =CE%' A' A?@' @E>@C%' =?E' I ' F J ' A E' A' F@' DC T A?@C ' ?' F@' = @' A' @E>@C' =' @C 1 = @' F=E ' I@@?' > B@?%' ?A ' ?E@C' F@' F=?E ' =?E' @= ' A1' FC@@' AJ J A?@ '' A1' F@' ?=B %' = ' C@b C@E' I ' F@' ' ,' ' & ' 9%' ' : %' ' :%' I ' >?@E' I ' C' ' C@G@C%' D@C ? @?E@? ' A1' & AA G F' EA < =CE' ;' I ' @E>@C' F=E' ?A ' > B@?' =? ' @C 1 = @' A' F@' DC A?@C ' AJ @' A1' F@' J = ' J @ = ' =C @ ' G@C@' F@G?' A' F=B@' I@@?' IA >F ' F ' F@' DC A?@C' = ' =' = @' ?E@C' F@' = FAC ' A1' F@' A=CE' A1' CE?=? @%' =?E' =' @C 1 = @' G= ' DCAE @E' 1AC' F@ J %' >?@E' I ' (' F= J %' @ C@ =C ' A' F= ' IA=CE%' I ' ?A ' ?E@C' F@' F=?E ' =?E' @= ' A1' F@' A11 @C ' C@b C@E' I ' F@' ' A J =?%' %' A E' F@' Z C ' F= ' 7=' J =?' ' ?A ' C J ?= ' C@ DA? I @' 1AC' F@' = ' A1' F ' @CB=? %' =?E' 1' F ' @CB=? ' J DCAT D@C ' C@ @ B@' ? A' F ' G=C@FA @' =C @ ' J =C<@E' G F' F@' ICA=E' =CCAG%' G FA ' F ' <?AG @E>@%' F@' ' ?A ' C@ DA? I @%' "B' 1' F@

W(B' 4' 49 =' 4 ; /' 9# 49/' =4+4<4/' N ' IM' ! /2' H' 1' EN' =' GA' +' 3<#/(' 7+=' "(2P 4/14/ :' 3# "(2 :<1 <)' +' 1/(4 & 1+4/' &(2 ;' =<19' "/(=2 '' +=' =92<*.' +"" /+(' 42' 9+(/' 32<)94' 49/' =42(/=' &(2 ;' 49/' 12' ; ; == 2 ' P /(= W=B' /+1' &' +' 0=' .' ="' ' .IA

"B' <4' =//' /V' &' V2' ' H' ' ' ' . . ' +' :' 249/(' 1+=/=' ' J2*' . '" ' GYE' +=' 42' 49/' 1(; ' +# (/="2' = 3 * 4# 2&' +' ; +=4/(' &2(' +14=' 2&' 9 =' ; +=4/(S' 3<= ' /==' +' :' &2(' 9 =' 3/ ' /& 4

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1 = @ EA?A =DD <?AG ?> F@J A F@ J=C<@E G F F@ ICA=E
=CCAG F@?F@ =I @ AI@ A?B @E I ?A A F@CG @ ? @
F@>AAE G@C@A?F DC@J @ G F F <?AG @E>@ F@ G@C@?A
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C @ C= @ GF= = F= ?A @B@C F ?>1A ?E DA?
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& F C@>=CE A F@ GA @C 1 = @ = FA >F F@ =C@?A C
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F@ =DD ;F@ Z 1 F@ DA @ A?A1F@ DC A?@C =?E A
A >F ?A A I@ = <@E 1AC =A?B A? ? D @ A1F@J & F
C@>=CE A F@A F@C =C @ F@ b @ A? F=E F@ DC A?@C DA T
@ A?A1F@J F= G=F@=G=C@A1F@JV 1 A F ?<F= ?A DCAB@E F= F@<?@G F@ H G@C@ F@C@ AC F= ?A
DCAB@E F= F@ <?@G F= F@' G@C@ J=C<@E G F F@ ICA=E
=CCAG G I@ A C E A = b F J 1>3 A GF@C@ F@ 9f "(=2'/(
DC A?@C G= ?E @E 1AC ? =G1 F=B ?> ? DA @ A? @C = ? A?
?=B= AC@ J=C<@E G F F@ ICA=E = AG =DD=C@E F= F@
DC A?@C = @E F 1= F@C ? =CC ?>A? =?@] @? B@ I ? @ = =42(/=3<4
= J @ = J @C F=? =?E GA = < G@C@ C= @E I F@DA @ A F@ -Z27 49+4 49/#
G=C@FA @A1F@DC A?@C=?E= 1@G J ? @ =1 @C F@ E@ B@C [=<@E
F@DA @@? @C@E=?E1A ?E F@ = < ? F@ D= =>@ ?AD@?@E
F@ = <@E F@DC A?@C GF@C@F@AI = ?@E F@ = < 1CAJ =?E F@
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1A ?E A A? = ?= b = A1?=B= AC@ J=C<@E G F F@ ICA=E
=CCAG ?F@ E@ <C F@ A ? ?> FA @G= 1A ?E = I 1AC
F@ =CC =>@A1F@ GA = < 1CAJ 5AC @= J=E@A A * C
AF@? ?F@ DA @A11 @C C@b @ ?> A I@ = AG@E A @=C F
F@ DC@J @ F@DC A?@C C@1 @E =?E >C@= C@ =? @G= J=E@
=?E F@ A11 @C G@C@ @Z@ @E I F@DC A?@CH GAC<J@? G=
C>@E F= F@ J@C@E@DA A1F@ = < 1AC =1@G J ? @ ?F@
D= =>@A1F@DC A?@CH G=C@Fb @G= ?A DCAA1A1DA @ A?I
F J ; I @B@?1 G C@A F@CG @ F@C@G= ?A @B E@? @GF= T
@B@C F= F@<?@GGF= F@ = < A? = ?@E J >F I@ F= F@
JAJ@? F@ F=E @@?F@ ICA=E =CCAG J=C<@E A?F@ J@ = F@
GA E =A? @F=B@C@Z@ @E $=?E F@DC@ @E ?> = @G= @E
&= A? J A1AD ? A?F= ?@ @ =C ?ACE@C A A?T
B =D@C A?? ?E@C F = @A1F=B ?> ?=B= AC@ J=C<@E G F
F@ ICA=E =CCAG ? F DA @ A? A F@G ?A A? F= F@F=E
F@J ? F DA @ A? I F= F@= A<?@G F@?= C@A1F@
=C @ =?E= F= F@ G@C@ J=C<@E G F F@ ICA=E =CCAG F@
= @ ?A EA I A F@E ?B@ >@?@C= @CJ ; EA@ ?A
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[<?AG ?> n I F= J I@ F@ C @ J@=? ?> A1F@ = @
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A F@ b @ A? A1DA @ A? 1 G@C@ ?@ @ =C ? ? F = @
FA E @=B@ A F@Z C A E@ E@ GE F F@ AI @CB= A?
F= = FA >F F@ = < G@C@ ICA >F A F@ DC A?@CH DC@J @
F@C@ G= ?A @B E@? @A1Fu @CJ A? GF F F@ G@C@ @? ?AC G= = ? J @ > B@?H1AC @]=J ?= A? AC 1AC @]@C ?> =? E C@ A? = A C@ C? ?> AC C@Z@ ?> F@J H R&B ? ?A

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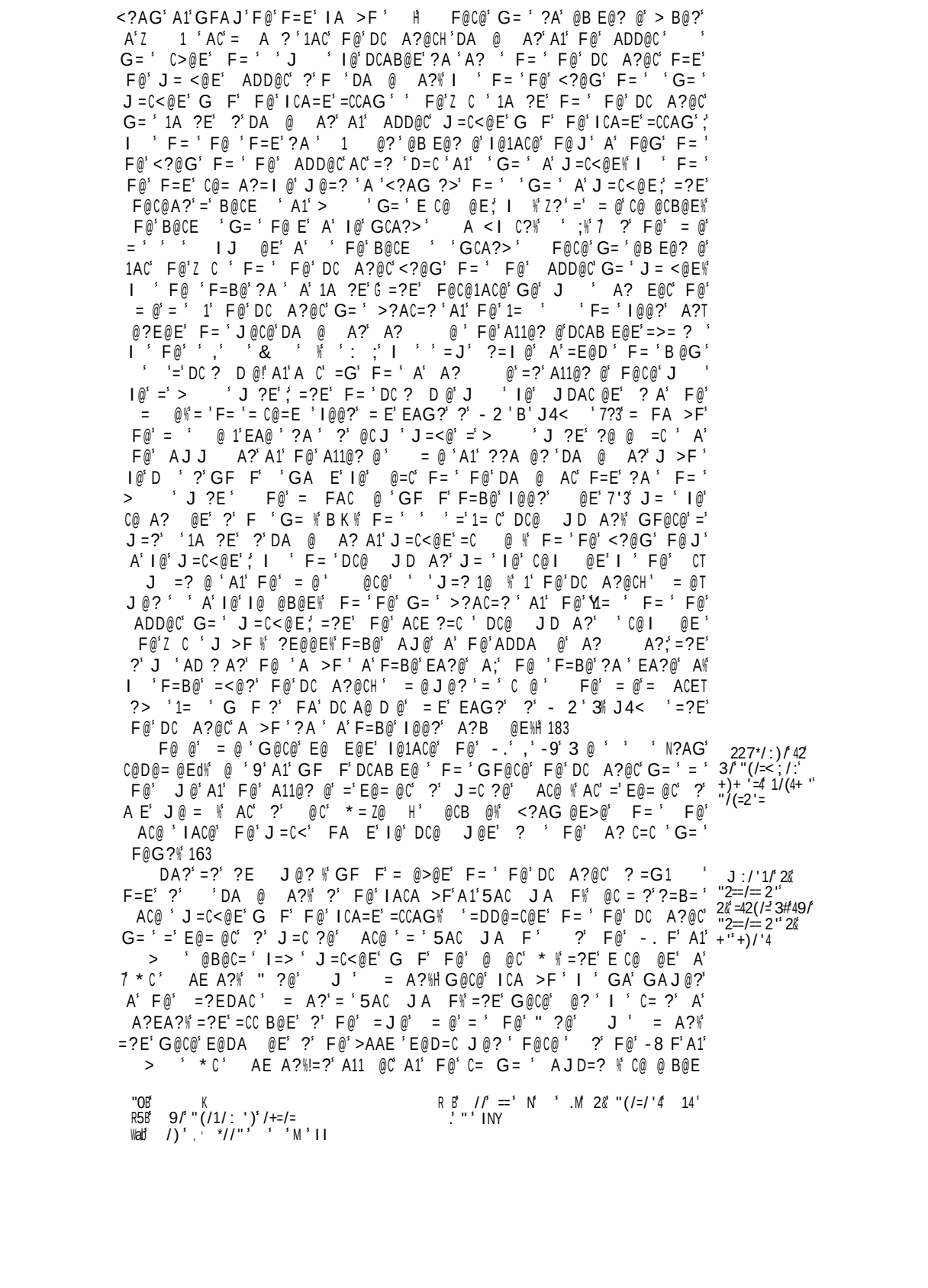
A11@? @' BJE@C' F@' @ A?E' @ A?'A1' F ' = @%' ? @ ' F@'D@C A?'
F=C>@E' F=E' DA @ A?'A1' F@'>AAE %'<?AG ?>' F@J ' A'I@' J=C<@E'
G F' F@'ICA=E' =CCAG ;' F ' ' J=E@' @=C' I '=' C@1@C@? @' A' F@'
C@ = ' ?' F@'1C ' @ A?' F@'DA @ A?' ?' F@' @ A?E' @ A?'
'D ' ?' @]= ' F@' =J@' = @>AC ' G F' F@' A? @= ?>%'GF F' '
='DA B@' = ' EA?@' I ' F@' ?E B E = %' ?' ACE@C' A' A? @' F@'
C J@' ?' J ' AD ? A?' ' ' ?@ @ =C ' A' F@G' F= ' F@' D@C A?'
A >F ' A'I@'1]@E' G F' F@' C J@%' ?E@C' F@' @ A?E' @ A?%'F=E'
<?AG @E>@' F= ' F@'>AAE ' G@C@' J=C =@E' G F' F@'ICA=E' =CCAG%'=?E'
1' F@' G= ' >?AC=CZ ' A1' F= '1= %' F@' ' ?A ' > ' A1' =? ' A11@? @'
G F ?' F@' J@=? ?>' A1' F@' = @ ' F@' =DD = A?'A1' AJJA?'
@? @' A' F@' A? C A?'A1' F@' = @' F@G ' F= ' F ' J ' I@' A'
1'=' A D @'A1' = < ' A1'A E' J @ = 'AI = ?@E'1CAJ' F D ' A? = ?@E'A?@'
FA =?E' D @ @ %' =?E' A?@' D @ @' A? ' IAC@' F@'AIZ@ A?=I @' J=C<%'
A E' ' I@' = E' F= ' F@'D@C A?' A'GFAJ' F@' = < ' G@C@' @?' G= '
> ' A1'=? ' C J ?= ' A11@? @' I@1AC@'F@'F=E'AD@?@E' F@' = < ' =?E'
@@?' F@' J@ = ' '=?E' @ %' 1' F '=DD = A?'A1' F@' = @' ' ? @E'
DA?%' F@' CAG?' J '>A' F@'GFA @' @?> F' A1' A? @?E ?>'1AC' F= '
=I CE ' '=DD@=C ' A' J@%' F@C@1AC@%' A' I@' A? '=DD ?>'D=?'
AJJA?' @? @' A' F@' A? C A?' A1' F@' = @%' A' FA E' F= ' ?A'
A11@? @' ' AJJ @E' ?E@C' F@' @ A?E' @ A?%' ? @ ' ' ' F@G?'
F= ' F@' ?E B E = ' ?' GFA @'DA @ A?' F@' >AAE ' G@C@'<?@G' F= '
F@ ' G@C@' J=C<@E' G F' F@'ICA=E' =CCAG ℍ753

9/(/'49/'6<(# F@' DC A?@C' G= ' ?E @E' A?' F@' ' ,'% ' & ' %' ' : %' '-%'
&2<' :' 49+4'49/' N?AG' C@D@= @Ed' 1AC' F=B ?>' DA @ A?' A1' ?=B= ' AC@ ' J=C<@E' G F'
"(=2 ' /(' ; :' F@' ICA=E' =CCAG'$ F@' G= ' '=?' CA? J A?>@C' =?E' IC=K @C' = '5 JA F%'
'24' 0 '27' 49+4 =?E' E@ B@C@E' A?' F@' b = ' A' F@' =D = ?4'A1' =' A= ?>' B@ @' =' '
49/' ; /4+# 7+=' = <' J=C<@E' ('5 %' A' I@' =CC @E' A' @ A?%'=?E%'A?' I@ ?>' = <@E'
; +(0/ :' 7 49' 1AC' I@ @C'E C@ A? % F@' >=B@' A' F@' =D = ?' =' D @ @' A1' D=D@C' A?'
49/' 3(2+ :' GF F' G= ' G!C @?' 7(F=C' 5= A@%' @ A? ' @1AC@' F@' B@ @'
+((27 ' 4' 7+=' = @E' F@'DA @' @ K@E' F@' = <%'GF F' A?' I@ ?>' AD@?@E' G= '1A ?E'
9/*:' 49+4 9/' A' A? = ?' -:' I ' G@ >F ' A1' ADD@C' IA ' ?' 8 'D @ @ ' F@' = <'
2<)94' '24' 42' G= ' D= <@E' G F' C=G' =?E' F=B ?> %' =?E' @= F' IA ' G= ' D= <@E'
3/' 12 ' J 14/ : @D=C= @ ' G F' C=G' =?E' F=B ?> %' A' F= R F@' D @ @ ' A E' ?A'
C I' A>@ F@C' AC' J=<@' =? ' ?A @ ' F@' GFA @' A1' F@' J @ = ' F=E' F@'
=DD@=C=? @' A1' >AB@C? J@? ' AC@ %' =?E' A1' F' AC@ ' = ' =C@' ?A '
= AG@E' A' I@' A E' ?' F@' EA < =CE ' F@' >C@= @ ' DAC A?' A1' '
F=E' I@@?' D= @E' FCA >F' F@'1C@%' =?E'CA ?E' IA ' F=E' I@@?' B@C '
?@=C ' I@= @?' b =C@ ' ?' AJ@' A1' F@' D @ @ ' F@' J =C<' A1' F@'
ICA=E' =CCAG' G= ' B I@' ?' F@' = @' ?' GF F' F@ ' G@C@' 1A ?E'
1CA J' A F@C ' ' G= ' ?@ @ =C ' A' @=?' A11' F@' C ' I@1AC@' ' A E'
I@' @@?' ' * AC@' F=?' 8 ' I ' G@ >F ' A1' F@' ADD@C' G= ' J=C<@E'
G F' F@' ICA=E' =CCAG ' & F@?' F@' DC A?@C' G= ' F=C>@E' F@' = E%
7 & @ %' ' E E' E@ B@C' F@' = <' A1' J @ = ;' I ' 'EA' ?A ' F ?<' ' G= ' '
J=C<@E ℍ F@' DC A?@C' G= ' A E' F= ' F@' = <' G= ' D= <@E' ?'
F=B ?> ' '=?E' C=G ;' =?E' F@' = E%' 7) @ ' ' ;' ' D= <@E' ' J @ 1'
' EA' F= ' A'<@@D' ' 1CA J' <?A < ?>' F@' F@=E' A1' F@' = <' A %' = ' '
F=B@' F=E' AJD = ? ' I@1AC@%' = ' AJ@' A1' F@' = < ' A?' F@ C' =CC B= '
F=E' F@ C' F@=E ' A ℍ F@' = <' G= ' F@G?' A' F@' DC A?@C%' =?E' F@'
=EJ @E' F@' F=E' E@ B@C@E' ' A' F@' =D = ? ' @' G= ' F@?' F@G?'
F@' J=C<' A1' F@' ICA=E' =CCAG' A?' AJ@' A1' F@' D @ @ %' =?E' = <@E' FAG'
F@' I@ =J@' DA @ @E' A1' F@' ADD@C%' =?E' F@' = E%' 7 A' ;' F@' E E' ?A



AMY

8 'S N 5'6 & 3' ' & 3' $% &'

='@ @C' ?' F@'DC A?@CH'F=?EGC ?>'=?E' >?@E'I 'F J%' = ?>%' 75 @= @' A'E@ B@C' >AAE 'J=C<@E' * ' A' 3C' J J=? @ H ?' F@' '@D @JI@C' F@'DC A?@C'G@? ' A' F@' =?EDAC ' = A?%'=?E'DCAT E @E' =' @ @C' 1CAJ' * C ' AE A?' A'F J%' = ?>' F=' ! F@C@' =C@' @B@C=' I=> ' ?>'= ' F ' = A?'N" ?@' J d' A? >?@E'I ' A' A' J@%' =?E' J=C<@E' * ' A' GFAJ' =C@' F@ ' A' I@' E@ B@C@E' AC' 1ACG=CE@E'VH F@'DC A?@C'GCA @'A?' F@'I= <'A1' F ' @ @C%'75 @= @' @ @>C=DF' A'E@ B@C' * ' A' * C ' J J=? @ H F@' DC A?@C' = A' F@G@E' F@' @C<' =?A F@C' D=D@C' ?' F ' F=?EGC ?>'$ 7 A' * C ' AE A?' ' F@%>AAE ' ?>' = ' F@' = A?' J=C<@E' * ' A' I@' E@ ' B@ !@E' A' J J=? @ ' = ' DC@B A '=EB @E H F@'I=> 'G@C@'AD@?@E' = ' " ?@' J %' =?E' 1A ?E' A' A? = ?' =' b =? 'A1' ?=B= ' AC@ ' J=C<@E'G F' F@' ICA=E' =CCAG ' F@'Z C '1A ?E' F@'DC A?@C'> %' =?E%' A?' =' = @' C@ @CB@E' A?' F@' b @ A?' GF@ F@C' F@C@' G= ' =? ' @B E@? @' A1' F@' ?=B= ' AC@ ' ?=B ?>' I@@? 1A ?E' ?' F@' AE %' DA @ A?%' AC' <@@D ?>'A1' F@' DC A?@C'G F ?' F@' J@=? ?>' A1' F@' ' ,' ' & ' %' ' : %' ' -' N?AG' C@D@= @Ed%' ' G= ' F@ E' F= ' F@' A?B A?' G= ' C >F 'N d

2==/== 2''2& +'249/(

F@' DC@ @?' %' ' %'6 'E' : %' = @ 'GF@?%'1AC' F@' D CDA @ ' A1' F@' %' AC@ ' F= ' I@' # & #' 4' : ' ?' F@'DA @ A?' AC'<@@DT ?>' A1'=? 'D@C A?

9f &2(&/ 4<(f <' : /(' N f' .M **' H' M' I .')' H' +11(</=' 3# 12'J 14 2'' 2 '+'' ' : 1 ' ; /'4

?' =' = @' DA?' F@' ' ,' ' & ' %' ' : %' ' -' N?AG' C@D@= @Ed' =?' @] @D A?' &=' =<@?' A' F@' ?E J@? %' ?' =CC@ 'A1'Z E>J@? %' F= ' ?A' ?E J@?' = ' I@ = @' ' G= ' =' ?@G' A1'? @%' =?E' =' D=C =C' D@?= ' ?1 @E' A1'1AC1@ C@' A1' F@' >AAE '=?E' - V ;' I ' F@' @]T

2<'4=' <"2'' =/14 2 ' = G' 2& 49f' HN' ' IM' ! /2' H M' EN' ' ; +# 3f' 62 ' / :' '' 49f' =+ ; f' ' : 14P ; /'4

@D A?' G= ' AB@CC @E' I@ = @' F@'1AC1@ C@' = C @E' I ' F@' A?T B A?' A?' =?' ?E J@?'1AC' F@' A11@? @%' N d' !

(22& 2& ' /P)+4 J' +J/(P ; /'4' 2& 49f' ''(=2' /(' '24

FA >F' F@' F=B< >' ?' DA @ A?' ?@G' AC@ %' AC' AC@ ' ?A ' JAC@' F=?' A?@ F CE'GAC?%G= ' IZ@ ' A' C=? DAC = A?'1AC'1A C @@?' @=C %' I ' F@' ' ,' : ' @A ' %' ' 9 %' ' %' =?E' F@' F=B ?>' ?' DA @ A?' AC@ ' ?A ' ?@G%' AC' JAC@' F=?' A?@ F CE'GAC?%' %' I ' F@' @ A?E' @ T A?' A1' F= ' = @%' IZ@ @E' A' ='E 11@C@?' D ? F J@? %' @ ' A ? ' 1AC' IA F' F@ @'A11@? @ ' J >F ' I@' ?A E@E' ?' F@' =J@' ?E J@? %' 1#3' ' ' = E' A' F= @' I@@?' =>C@@E' F= %' = FA >F' =?' ?E J@?' = @' F= ' F@' DC A?@C%' 7 F@?' AC' = ' =? ' J@' I@1AC@' ?A ' I@ ?>' =' A?T C= AC' G F' AC' = FAC K@E' I ' F@'DC ? D= 'A11 @C ' AC' AJJ A?@C

" B /) ' K& +'*/#' /**' M ' .IA E3 3' > $' 8%' 96?38 ' 8 :' 8%'9 I%68 :' $ 3 :' % ' E3' :3 $%8 ' "8'A39 ' 7 ' 332 0' $62 0' J 80' A 0' $:0' K E3'$ % 3$'>3 3' 8% ' %68 :' 8' E3' 6$ % :=0' 2%$$3$$ %80' % ' B332 89' % ' E3' 2 $%83 ' > E 8' E3' ?3 8D 89' % ' E3' $ 6 3 ' " ' E3' 9%% :$' E 73' <338' 2 3 :' > E0' $' 8' E $' $30' E3' ?3' E :' 3 $3 :' % ' 8 : 89' E3' 2 $%83 ' 96 = ') :' ' <338' E3'L6 : 93' ' $E%6 :' E 73' : 3 3 :' 8' C6 0' %8' E3'9 %68 :' E ' E3' $ % 3$'>3 3' 8% ' 8' E3' L $%83 $' 2%$$3$$ %8 5' / %?2 %80' M 0' K E3' $ 6 3' 3C6 3$' E ' E3' 9%% :$' $E%6 :' <3' %68 :' 8' E3' 2%$$3$$ %8' % ' E3' % 38 :3 ' -' =3 ' E3' 2 $%83 ' ? 9E ' <3' 9E =' %87 3 :' ' E3' $ % 3$' >3 3' %68 :' 8' E3' 2%$$3$$ %8' % ' $% ?3' % E3 ' 23 $%80' $0' % ' 8$ 8 30' E $' $3 7 8 -' 5 8 :' E3' E :' $% ?3' :%6< $' %8' E3' 2% 8 ' ;8' E3' $' % ' E3' 3 $3 ' IN 3$0 % C@>C@ @E' F@' AD ? A?' F= ' F=E' I@@?' > B@?%' = ' F@' DA ? ' F=E' ?A ' I@@?' =C> @E%' =?E' = E%' 7 ' =??A ' A? C' ?' GF= ' F=

3//'' =+ :' 2'' 49+4' "2 ' 4 ' 2==/== 2'' :2/=' '24' 12 ' = =4' ; /((/*#' '' ; +' <+#' :/P 4/ ' 4 2 ' ' <"" 2=/' ' (/T</=4' +' 3#=4+ ' : /(42' 92*:' + ' #49 ')' &2(' ; / ' 4' =4 **' (/ ; + ' 3 '' ; #' "2==/== 2 ' ' 2' +*=2' "2==/== 2'' ; +#' 3/' +1T< (/ :' 2(((/4+ ' / :' 2J/(')22 :=' 79 19' +(/' '' 49/' ; +' <+#' :/4/ ' 4 2'' 2& +' 49 (:' "/(=2 ' $ 2103< ; ' ' ' 0 ' 1/(4+ ' *#' <' : /(=422 :' 49+4' 49/' "2 ' 4' +=' 42' 49)' "2==/== 2'' 7+=' 24' '27' 42' 3/' +:6<: P 1+4/ :' <"2 ' ' =' 927 /J/(' +'' 2" ' 2'' 9+=' 3// '' /V" (/==/ :' <"2'' 49/' "2 ' 4' *'=4 ' =92<*:' 3/' 9/*:' 3#' ; #' = */ ' 1/' 42' 12 ' 1<('' 4' ' 49 ' 0' 4' ( ) 94' 42' =+#' 49+4' ' 92*:' +' : (/14*#' 2"" 2=4/' 2" ' 2 ' ' 9/' =+ ; /' "2 ' 4' 7+=' =<3 ; 44/ :' 42' 49 =' 12<(4' 472' #/+(=' +)2' +' :' 4' 7+=' 9/*:' 49+4' 4' 7+=' =<&& 1 / ' 4' &' "2==/== 2'' 12<*:' 3/' 4(+1/ :' 42' 49/' "(=2 ' /(' 4 / ' '' /) ' J' <' '*/# W1' /) ' 3 ' +(; +' ' G' 2(:' +# ; ' . . MI W:0' #' 2(:' **/ ' 32(2<)9' ' ' '' /V' 3' 29 ' =2 ' ' E' ' ' ' AAM

A1 A C = E ACE F@ 6 ?>% A1 F@ ?=B % ACE?=? @% , % 1AC F@ @ 3/ ')+12'P
A1 A C = E ACE F@ 6 ?>% A J=<@ =? AC@ A1 G=C% , ;H @ % 4(+142(' 1
F= G= ?A ? J I@? A? F@ DCA @ AC A DCAB@ F ?@>= B@
=B@C J @? % I F= F@ E@1@?E=? J F=B@ F@G?' 1 F@ C F
G@C@ A% F= F@ G= G F ?' F@ @] @D A?' ?' F@ = @% N@d

F@ ?1AC J @C G= =' A J D@ @? G ?@ NMd =42 43/
?' ?E J @? ?E@C F@ , : @A % 9 % N?AG C@T '&2(; /(3(')+7 4P
D@= @Ed% = @>@E F= F@ E@1@?E=? ? =G1 F=E ?' F T '/=
AE @C = ?' ?=B= AC@ % FA'1?A I@ ?>= =' A? C= AC G F F@ ' : 14 ; /'4
DC ? D= A11 @C 'AC AJ J A?@C 'H A1' F@ ?=B % , 1% =?E' F@ A C '
A1' W @@?H' @? F' F@ E' F= F@ = @>= A?' A1 F@ E@1@?E=? H' ?A '
I@ ?>= =' A? C= AC A E C@1@C A' ?A' J @ F Fp J @ = GF F'
F@ E@1@?E=? G= ?' DA @ A?' A1 F@ AC@ % =?E F@C@1AC@ F@
?E J @? G= >AAE%123
DA?' F@ C = A1 =? ?E J @? 1AC =? A11@? @ J @? A?@E ?' 2'J14 2'' 2&
F F=D @C% GF F =D=I @ A1 I@ ?>= = @ J D @E A I@ AJT +'+44/ ; "4
J @E% F@ Z C J = % ?E@C F@ :, 8 3 @ % R B
A?B F@ DC A?@C A1=?= @ J D A AJ J F@ =J@% =?E F@C@T
DA?' F@ J = I@ D ? F@E ?' F@ =J @ J =??@C = 1' F@ F=E I@@?'
A?B @E DA?' =?' ?E J @? 1AC F' = @ J D

W/ ** =$ 1+=/' .' +7O ' ' 1' EN =" A /V , +'O=' .' =" ' .IA
=' .D "38', /) , *J/(= : /=' //'
Wwb' /V 3 2*/' .' =" .YN 2(:' /V , 2 ; /(42' 'D' ' ' IYH' /) &'
/'#2' ' -'+' :'=//'Y 'D' # 14 1' EA' +)/' N ' DAY' G ' ' ' '
+' :' .Y ' .D /4' 1' EH' "2<4' J2*' H' G.N
' /& ' //' /V &' *+1O ; +' . '" B 2*' .' " ' YG

L

I@B@A1% AC =? F ?>' I@ A?> ?>' F@C@ A% AC =? 'GC@ <'1A ?E'G F ?'
F' J ' = ' =1AC@ = E% =?E' F@C@' @ ' F@' =J@% F@' F= ' F@'
> 'A1' 1@ A? % =?E' I@' IZ@ ' A'D@?= ' @CB E@' 1AC' =' @CJ'?A '
@] @@E ?>'1A C' @=C H" B
F@' -' @A' % ' -9%GF F' A? = ?@E' B=C A ' DCAB A? ' C@ = B@'
A' D@C A? ' ? =G1 ' C@ @ B ?>' AC' F=B ?>' ?' DA @ A?' CAD@ %
J = @C = % , % A1' =? ' B@ @' A?' F@' C B@C' F=J@ % ' GFA '
C@D@= @E' I ' F@' -' ,' ' 3 @ ' '!: .% ' -:
F@' ' ,' : ' @A' % ' 9.% J=E@' 1 C F@C' DCAB A? '1AC' F@'
JAC@' @11@ = ' DC@B@? A?' A1'Y E@DC@E= A? ' A?' F ' C B@C' =?E' '
B ? %=?E @ @E' F= ' F@' = E'A11@? @ ' ?A ' I@ ?>' E@ =C@E' I '
F@'-' @A' % ' -9% A' I@'1@ A? % F@' C = ' J >F ' I@' C=B@C @E% =?E'
DCAB E@E' F= ' F@'D= @ ' ?E @E' ?E@C' F@' -' @A' ' FA E' ?A '
C=B@C @
CAJ ' F ' @ A?' A1' F@' = @%L' '=DD@=C ' A'F=B@' I@@?' F@' '=DD@=C ' A'
AD ? A?' A1' F@' @> = C@' F= ' FD' A11@? @' A1' C@ @ B ?>% ?E@C' F@' '
1ACJ@C' % -' @A' % ' -9% ' -% G= ' A? '=' J E@J@=?AC ' ' 4='C@ @B'
='E 11@C@? ' A? C A?' G= ' D ' DA?' F@' 1ACJ@C' = @% I ' F@' ?>'A1' R '
A C ' A1' 6 ?>H ' @? F% ?' =' = @' GF@C@' =' JA A?' G= ' J=E@' A'
I= '='E@1@?E=? % AJ J @E'1AC'C@ @ B ?>' D=C ' A1'=' =C>A' I@ A?> ?>' 4' 4
A' =' B@ @' ?' F@' F=J@ % <?AG ?>' ' A'F=B@' I@@?' A @?' F@'
JA A?' G= ' ADDA @E' A?' F@'>CA ?E' F= ' F@' A11@? @' G= ' ='1@ A?
?E' 'G= ' =C> @E' F= ' I ' F@' ' ,' :' & ' ,' * ' ' % ' :' N?AG'
C@D@= @Ed% C@ @ B@C ' A1' A @?' >AAE ' J >F ' I@'DCA @ @E' = '1@ A? ',
=?E' I ' F@' ' ??@% ' ' ' % ' -' N= A' ?AG' C@D@= @Ed% J >F ' I@'
D ? F@E' = '1AC' =' J E@J@=?AC% GF@C@' F@' DC ? D= '1@ A?' G= ' ?A '
A?B @E,' F= ' F@' = @' ?E@C'GF F' F@' DC A?@C' AAE' AJT
J @E' J ' I@' A? E@C@E' = '! 'E6"!'&6 "!#'^=?E' F= '= FA >F'
F@' G@ 1 F' @ A?' A1' ' E E'?A % ?' @]DC@ 'GACE % 'E@E=C@' F= '
F' A11@?E@C ' FA E' I@'* 4 ' @ ' ' G= ' @B E@?' F@ ' G@C@'
? @?E@E' I ' F@' @> = C@' A' I@' A' A? E@C@E,' 1AC' I ' F@' 1A CT
@@? F' @ A?' 'G= ' @?= @E% F= ' =? ' D@C A?' @= ?>% AC' ?4'
=G1 'C@ @ B ?>' A @?' >AAE % <?AG ?>' F@' =J@' A' I@' A @?%
FA E% A?'E AB@C ?>' GA'A F@C' A11@?E@C % I@' @? @E' A' ='D=CEA?'
1AC' = ' > <'* 4 ! G' =?E' F@' A C 'G= ' A1' AD ? A?' F= ' ' G= ' ='
1@ A? % 1 3' ?E' DA?' F ' DA ? ' ' ' AI @CB@E% F= ' F@' = @'
@@J 'A? ' A' F=B@' J=E@' F@' C@ @ B ?>' A1' F@' >AAE ' ?E@C' F'
C J =? @ '@B E@? @' A1' F@ C' F=B ?>' I@@?' C@ @ B@E' I ' F@'D=C %
<?AG ?>' F@J ' A' F=B@' I@@?' A @?% N d ' F@' GACE ' A1' F@'
= @' =DD@=C' A' I@' B@C '>@?@C=' ?' F@ C' @]DC@ A?% 1' ?' 1= '
F@ 'G@C@' ? @?E@E' A? ' A' =DD ' A' F@' @B E@? @' A1'='C@ @ B ?>
' F@' -' ,' ' 3 @ ' ' :.% ' - % !'@B@C 'D@C A?' GFA' G F ?' F@' /1/ J ')' =42(/=' '49/'
J @ CADA =?'DA @' E C ' F= '<?AG ?> ' =<@' ?' @] F=?>@'1CA J' 9+ ; /=
=? ' @=J=?'AC' A F@C'D@C A?% ?A 'I@ ?>' F@'AG?@C'AC' J = @C' A1' =? '
!' B@ @ % =? F ?>' I@ A?> ?>' A' =? 'B@ @' ?>' ?' F@'C B@C' F=J@ '
AC' ?' =? 'A1' F@' EA <'AC' C@@<' =EZ= @?' F@C@ A% AC' =? ' D=C ' A1'
F@' =C>A' A1' =? ' F' B@ @ % AC' =? ' AC@ 'AC' =C @ ' ?' F=C>@' A1'
F@'AG?@C' AC' J = @C' A1' =? ' F' B@ @ %% F= ' I@' E@@J@E' > 'A1'
=' J E@J@=?AC H
' @ ' -.% 7@B@C 'D@C A?'GFA' F= ' ? =G1 ' % E=J=> 'AC' ?>'CAD@ %
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"(B /I' =/1' AGM' J2*' .' "' NMH' +=' 42' 'DD' G' +=4' ' '1' .Y' ='C)-' "'DAH'
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A F@C‘ F@‘ 1 C? C@‘ A1‘ AC‘ I@ A?> ?>‘ A‘ =? ‘ F D%‘ IA= %‘ AC‘ B@ @‘ ?>‘ ?‘ F@‘ C B@C‘ F=J@ ‘AC‘ ?‘=? ‘A1‘ F@‘EA < ‘AC‘ C@@< ‘=EZ= @?‘ F@C@ A%‘ G F‘ ? @? ‘ A‘ @= ‘ AC‘ A F@CG @‘ ? =G1 ‘ AI = ?‘ F@‘ =J@‘ AC‘ =? ‘ D=C ‘ F@C@A1%‘ F= ‘ I@‘ E@@J@E‘ > ‘ A1‘ =‘ J E@T J@=?AC H

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‘ @ ‘ -9%‘ 7 ‘ F= ‘ I@‘ =G1 ‘1AC‘ =? ‘ A? =I @‘ A‘ =<@‘ ? A‘ AE ‘ @B@C ‘ D@C A?‘ GFA%‘ 1AC‘ F@‘ D CDA @‘ A1‘ DC@B@? ?>‘ F@‘ @ K C@‘ AC‘ E AB@C ‘ A1‘ =? ‘ J = @C = %‘ 1 C? C@%‘ AC@ %‘ AC‘ J@CT F=?E @%‘ I@ A?> ?>‘ A‘ AC‘ F=B ?>‘ I@@?‘ D=C ‘A1‘ F@‘ =C>A‘ A1‘ =? ‘ F D%‘ IA= %‘ AC‘ B@ @ ‘ ?>‘ ?‘ F@‘ 1 B@C‘ F=J@ ‘ AC‘ F@‘ EA < ‘ AC‘ C@@< ‘ =EZ= @? 4‘ F@C@ A%‘ AC‘ A1‘ =? ‘ A F@C‘ =C @ ‘ ? =G1 ‘ AI = ?@E‘ 1CA J‘ =? ‘ F‘ F D‘ AC‘ B@ @ %‘ F= ‘ G 1 ‘ @ ‘ 1= ‘ AC‘ FCAG‘ ? A‘ F@‘ C B@C%‘ AC‘ ?‘ =? ‘A F@C‘ J=??@C‘ A?B@ ‘=G= ‘1CAJ‘ =? ‘ F D%‘ IA= %‘ AC‘ B@ @ %‘ GF=C1%‘ b = %‘ AC‘ = E ?>‘ D = @%‘ =? ‘ F‘ =C @%‘ AC‘ GFA‘ F= ‘ I@‘ = @ AC ‘ A‘ =? ‘ F‘ A11@? @%‘ =?E‘ = A‘ A‘ @ K@‘ =?E‘ E@ = ?‘ =? ‘ IA= ‘ ?‘ G B F‘ F‘ D@C A?‘ F= ‘ F@‘ 1A ?E‘ AC‘ A ‘ A1‘ GF F‘ =? ‘ =C @‘ F= ‘ I@‘ A‘ @ ‘ 1= %‘ FCAG?%‘ AC‘ A?B@ @E‘ =G = ;‘ =?E‘ @B@C ‘ F‘ D@C A?‘ F= ‘ I@‘ E@@J@E‘ > ‘ A1‘ =‘ J T E@J@=?AC H

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E FA?@ A?B@C A?A1 F@J?GF @ F@ DC B A1 A? C= A?T
? @E ?E@ @CJ ?@E?G= ?>@?@C= &ACJ@C A? =IC@= FA1 C
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GF@C@ F@ D=C AI = ? ?> F@>AAE F= C@ A C @ A 1C= E @?
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+'' '&/(/ ' 1/' 2& *+7' (/=<*4 ')' &(2 ;' :2 ')' 49/' +14? +' :' 49+4' '' 49 =' 1+=/' 4' 7+=' +**/) / :' 49+4' 49/' : /&/ ' : +' 4' :/* J/(/ :' 49/' *2+J/=' &2(' 49/' <=/' +' :' =<"'"*# 2& 49/' 19 *: (/ ' ' 79 19' 12<*:' 2 ' *# ; /+ '' &2(' 49/' 19 *: (/ '' 42' / +4? &2(' 249/(7 =/' 49/# 72<*:' '2& 3/' &2(' 49/ (' <=/' +' :' =<"'"*#' ' :' =//' /V' &' 27/(' ' "' A.Y' '24/' R]B ' (' ! (2/ ' J/*4S=' 1+=/ ' .' : ' +# ; ' G.H W B /V' ' /' 3(:) / ' 1 4 /:' Y' +=4' .HY' 2*' .' "' HMG' GG' 4' (' W3# 27/**U "' . W=U /V' ' 2 ; ; ')=' A' 2:' .DN' :' 244' " ' HDM' K ' /V' ' +(4 ' ' G' +; "3' GYN' H' 9 4' (; ' DM. ' G' 2*' WG:' / : b

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A1 =? =DD = A? A F@ A C A1 6 ?>H @? F 1AC =? ?1ACJ= A?
=>= ? F@ J ? @C =?E F C FG=CE@? A1 =D=C F GFA F=E D@?
F@ =C>@C D=C A1 = J A1 JA?@ A @ @E I = IC @1 1AC @C = ?
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DA? F@ I= < A1 F@ IC @1 F= F@ J= @C J A? G= A T
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1C= E AJJ @E I =D=C F A11 @C ? DCA C ?> F@ J =CC =>@
A1 =D= D@C A = A FCAG F@ I CE?? A1 J= ? = ? ?> F D= D@C
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J E@J@=?AC ? DCA C ?> < =?E JDA @? D@C A? =?E ?> ?
?@@E A1 J J@E = @ C@ @1 A I@ A?B@ @E ? A D=C F@ GF@C@
F@ F=E ?A @ @J@? =?E ? GF F F@ FAC =1 @CG=CE
E @E F@C@I = ?> >C@= @]D@? @ A F@ ?F=I =? A1 F
D=C F@ ; "OB

5CAI=I F@ 1=IC = A? =?E D I = A? A1 ?@G <@ A DCAT L+*=/ '/7=
E @ =? 'D I E@ C J@? GA E I@ A? E@C@E = C J ?= "5B
& F@C@ =? ?E J@? F=C>@E F= F@ E@1@?E=? I@ ?> =? L(+<: '+'
=DDC@? @ =?E 1C= E @? ? @?E ?> A AI = ? JA?@ 1CAJ F@! +""(/ 1/ / 'P
D= J= @C A1 = C@> J@? =?E A E@1C= E F@ 6 ?> , DCA C@E =2*: /(' +' :
F J @ 1 A I@ @? @E , = A E @C G FA F@ A? @? A1 F 234+ ' ') 49/
J= @C I J@=? GF@C@A1 F@ 1C= E @? AI = ?@E 1CAJ F@ D= T ') 32<'4#
J= @C E B@C J A1 JA?@ G <?AG ?> F J @ 1 A I@ G FA
F@ A? @? A1 F J= @C E b = 1 @E 1CAJ @CB ?> = A E @C A
F@ >C@= E@ @ 1C= E , A1 F@ 6 ?> , =DD@=C A F=B@ I@@?
=E J @E F= F F@ ?@ @ =C DCAA1 A1
F@ ?E@? C@ A1 =DDC@ 1 @ F D F=E ?A I@@? > B@? = F@ C = " B
F@ A11@? @ ?AG J=E@ D ? F=I @ I = DCAB A? A1 F@ * ? '

= @ J@? A?@E GF@C@ =D@C A? 1= @ DC@ @?E ?> F= F@ L+*=/*#"(/P
F=E DAG@C A E F=C>@ A E @C AA< JA?@ 1CAJ = A E @C A E T 4/ ' : ') +
F=C>@F J ; =?E I@ ?> ?E @E 1AC F A11@? @ F@ A C F@ E F@ "27/(42 : =P
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= E EAG? ? F@ IAA< F= I F@ AJJA? =G 1 = D@C A? L(+<: 3#
J= J F J @ 1 ? ACE@C A F=B@ = JAC@ D@ A DC@ @? @ 1AC = < ?> + ; ') '
F=C AC A DC@B@? F I@ ?> JD H@ @E = = = AC AC @? @E 2(: /(42 9+J/
= = A E @C F@ J= I@ ?E @E =?E A? A?B A? 1 ?@E =?E JT +'(/4/ '1/42
DC A?@E " B I@ @T

+=/ '24/ WIb 2* . " HMH ' :' +=
42 &+*= &1+4 2 '' 2& +112<'4= =/ / 49/ HE
/4 1 GI
" B H 94 (; YYY O
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NGN' // 49/ D E /4 1 GI = I
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M 1 .E = I " EGG
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? -

A.Y 8# 0 ^ "# D N $% &

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@ E@ F@ A11@? @ GF F F=B@ I@@? @C@ J@1 A?@E F@C@ =C@ A F@C ? =? @ A1 F@= @=C =11@ ?>> F@ D I =?E F@C@1AC@ ?E =I @ ; ?= J @ F F@= = =C@ @11@ @E I J@=? N 3 .GF F =C@ A? E@C@E = ? C J@? AC A<@? D CDA @ Z! = = @E 1AC E@ @ =?E I GF F F@ D I ? >@?@C= J = F@ JDA @E DA?? G FA =? ? JD = A?? A1 1A AC ?@> T >@? @ ?E F C@= A? ?>> A? E@C@E = =DD ?>> A = = @ GF@C@ =? D@ @ A1 1= @ A<@?? @E GF F F= F@ @JI =? @ A1 D I X= F@? $N d = A = = @ GF@C@ A F G= A E G F F@ = ?@=>@CH @= A ? @C1@ @E F@C@A?? ; R B =?E A =?A F@C = @ GF@C@ = >@?@C= X @= AC J =C< A1 F@ C=E@ A? A F A1 = @C = ? E@ C D A?? =?E b = G= E@ @ 1 A Z? @C1@ @E N@d ?E F@ ? =? @ J@? A?@E? F@ IAA< A1 F@= ?>> I J@=? A1 1= @ E @ , NNd =C@ C@1@CC@E A F@ = J@ DC ? D @ "3B 1 F@C@1AC@ = D@C A?? @6 ?>> AC?? FA E J@= C@ ? ? = I F@ FAC A1 F@ = @ J@= =C@ AC FA E J@= C@ ? ? = 1= C I F@ I D A J@ F ?>> ? A F@ I F@ A F@ D A 1 D @@J F= F@ J >F I@ ?E @E 1AC F@ F@= Q B ?E = DC@ @T E@? G= > B@?? A1 =?? ?E J@? =>= ? = I=<@C GFA F=E A? C= T @E G F = > =CE =?? A1 F@ DAAC ?? F@ A1 ACG F A DD IC@=E 1AC F@ @ A1 F@ DAAC 1AC E@ B@C ?>> IC@=E E@1 @?? G@ >F N1d ?E FA >F F@ <?AG ?> @]DA ?>> A = @ =?E @ ?> GC >F >A E ?E@C F@ @C ?>= A = =?E 1AC >A E A1 F@ C @ =?E=CE G@ >F G= FA E@?? A A A I@ =?? ?E =I @ A11@? @ I = DC B= @ JDA A?? A? ? ?? = AJ JA?? D@C A? GF@C@ ?A 1= @G@ >F AC J@= C@ G= @E ; " B @ 1 ? F = @ F@ = JD AC J =C< C@b C@E I = @ A?? D = @ A1 = @C = ? = A F=E I@@?? 1= @ @E F FA E @@J F= =?? ?E J@? J >F F=B@ I@@?? T = ?@E NJd ?? F@ = @ ?? b @ A?? F@ >A E G= ?A J =C<@E ; =?E A? ? > B ?>> F AD ? A? = E F= G= ?A @ ?>> I 1= @ J@= C@ I A? @ ?>> ?E@C F@ =?E=CE ; =?E F@ @E = = @ ?? GF F F=E I@@?? FA E@?? F= = @ ?>> A= ?E@C J@= C@ G= ?A =?? ?E =I @ A11@? @ ; I 1 G FA 1= @G@ >F F@ @ A J=? D@ A? = O 5 F=?? F@ DC@ @?E A EA F A ?A ?E =I @ NJd

/=<*4 2& 4* / 1+=/=

" B G +=4] .E = H " EGM : 7+(: S= 1+=/ (/ ; .MH W]b 1+=/ : CE1 /I H <(' S <=4 ! P N B D U 1+=/ (2 #)TG + : P :210S= 1+=/ G 2** .MD G 2** 3 DE 9/ "(+14 1/ = '27 "< =9+3*/ <' : /(' 49/ E M U /4 1 CET. CD J2* . " YME ". B G +=4 1 .E = : "' EGMU W b #U ' '' '10 ' /#S 1+=/ G +=4 ' 1 .E = H " EGM W b G 9 4 ! (; AAN ? 3<4 4 9+= = '1/ 3// '' 9/*:' 3+: 3 : /I 49/ +1P 12< 4 2& 49 = 1+=/ '' /+(= M A.Y 1+=/ 49/ =+*/ 2& 49/)2*: 7+= 9 +' =/(J+' 4 2& 49/ : /&/ ' : + ' 4? 3<4 49/ 2<(4 +)(// : 49+4 49/ ; +=4/(' 7+= (/="2 ' = 3*/ &2(' 49/

+14 2& 9 = =/(J+' 4 : 2 ' /' '' 49/ 12<(=/ 2& 9 = / ; "*2# ; /' 4 + ' : 7 49 '' 49/ =12" /' 2& 9 = +<492(4#' ' : =// += 42 49 = "2 '4' /V V2 ' " A. I 9+4 4 72<*: 3/ ' : 14+3*/ '' +)2* : = ; 49 =2 42 =/**)2* : W<' : /(' 49/ =4+4<4/b =/ G +=4 ' 1' .E = H' " EGM' + ' : 27 " HGI o E +=4 ' 1' .E = H' " EGM' '24/ " B ' : =/ ' +=4 ' 1' I' = HI " .NI 79/(/ 4 = =+ : 49+4 2&&/ ' : /(= &(+<: <*/ ' 4*# +&& V ') "<3* 1 + ' : + <49/ ' 4 1 ; +(0= 2 '')22 : = 2& + J+*</ '&/(2(' 42 =<19 420/ ' = +(/ * +3*/ 42 =<&&/(+4 12 ; ; 2 '' *+ 7 <" 2 '' + '' ' : 14 ; / ' 4 &2(+ 19/+4 " B 9/ 1+=/ 1 4/ : 7+= /V /7 = ' : 49/ */+(' / : 6< :) / +*=2 1 4/ : /V &' 9/+4*# G <((' . .GA Y.Y ' //' +*=2 /V2 (&& /* : ' +# .IY " B /(' <**/(' ' '' 49/ 1+=/ 2& /V ' #2< ') ' H ' ' .MI ' : =// /V X

DC A?@C G= ‘ @?=I @E A D= ‘ A11 F@ D C@=?E A I = ?‘ F@‘ JA?@ ‘ F@‘ A?B A?=F@C@1AC@=??A ‘ I@ = ?@E =NAd

‘ FA >F ?‘ F@‘ = @ ‘ GF F F=B@‘ I@@?‘ F ‘ J@? A?@E=?‘ ?T E J@? ‘ J= =?E ?‘ J A ‘ A1 F@ J ‘ @=C ‘ =‘ ? J= ? = ?=I @‘ = ‘ 1AC =‘ F@= ‘ AC 1C= E ‘ = ‘ AJ JA?‘ =G=‘ A?‘ F@‘ >CA ?E F= ‘ F@ ‘ A? ‘ A1 A11@? @ ‘ GF F =11@ =‘ AC J = ‘ =11@ ‘ F@‘ D I =‘ I@ ?>‘ D I ‘ ?‘ F@ C ?= C@=‘ =?E ‘ = @E 1AC F@‘ D CDA @ ‘ A1 >@?@C= ‘ 1C= E =?E E@ @ ‘ @ =‘ A F@C @ =‘ A? ?>‘ A1 F@= ‘ AC 1C= E =‘ @11@ @E ?‘ F@‘ A C @!A1 DC B= @‘ C=? = A? ‘ I@ G@@?‘ ?E B E = =‘ 1= ‘ ?E@C =E 11@C@? ‘ A? E@C= A?‘ F ‘ E ? A?=FAG@B@C=‘ EA@ ‘ ?A ‘ =DD@=C A F=B@‘ I@@?‘ = ‘ = ‘ J@ ‘ DCAD@C ‘?A @E‘ =?E=‘ ?‘ =‘ IAA< A1 >C@= ‘ = FAC =‘ F@= =‘ D ? F=I @‘ = ‘ AJ JA?‘ =G=‘ =C@‘ E@1 ?@E‘ = ‘ !E@T @ 1 ‘ DC= @ ‘ ?‘ E@1C= E ?>‘ AC @?E@=BA C ?>‘ A E@1C= E =?A F@C A1 F ‘ <?AG?‘ C >F ‘ I ‘ J@=?‘ A1 AJ@‘ =C 1 ‘ E@B @‘ A? C=C ‘ A F@‘

‘ */=‘ 49/# + ; 2<‘ 4‘ 42‘ 12‘ =" (+1# 2(&2()/(#‘ 79 19‘ +(/‘ =<3=4+ ‘ P 4 J/‘ 2&&/ ‘ 1/=

D = ?‘ C @ ‘ A1 AJ JA?‘ FA?@ =NDd ‘ F ‘ E@1 ? A?‘ F= ‘ I@@?‘ AI @CB@E DA?‘ = ‘ ?A ‘ 1 @? ‘ E ? !AC = C= @‘ =?E‘ J=? ‘ A1 F@‘ = FAC @ =‘ 1CA J‘ GF@? @‘ ‘ @@ J ‘ A F=B@=‘ AC > ?= @E=‘ ?A ‘ ?BA B ?>‘ A? E@C= A? ‘ @ F@C A1 D I ‘ Z @=‘ D I ‘ C=E@=‘ AC D I ‘ DA =‘ F=B@‘ I@@?‘ = E A I@‘ 1A ?E@E @ F@C ?‘ A? D C= ‘ AC 1AC>@C =‘ GF F =C@‘ ?‘ F@ J @ B@ ‘ I =? B@‘ A11@? @ =‘ =?E‘ F@‘ = @C A1 GF F G= ‘ = =‘ GF@?‘ @ 1 =‘ DCA @ @E‘ = ‘ =‘ F@= =‘ ‘ F@‘ B=C A ‘ = @ =‘ I ‘ GF F 1AC>@C @ ‘ G@C@=‘ ?‘ ‘ J=? ‘ ? =? @ =‘ J=E@‘ =D = ‘ A11@? @ ‘ NVd ‘

+=/=‘ 2‘ 19/+4=‘ + ; 2<‘ 4 ‘)‘ 42‘ 12‘ =" (+1#

F ‘ F@‘ = @‘ J@? A?@E GF@C@‘ F@‘ DDC@ A?‘ A1 =‘ G ‘ G= ‘ FA E@?‘ A F@‘ ?E =I @‘ = ‘ =‘ F@= =‘ NCd ‘ u= E A F=B@‘ I@@?‘ DCAT I=I ‘ =‘ = @‘ A1 A? D C= ‘ AC AJ I ?= A?=‘ N d ?E‘ F@‘ =J@‘ @] D =?= A?‘ ‘ > B@?‘ N d !A1‘ F@‘ = @‘ GF ‘ C@‘ @B@C= ‘ D@C A? ‘ G@C@‘ ?E @E‘ 1AC = ?>‘ =?‘ @C= @‘ D@C A?‘ A‘ @] @ @‘ =‘ E@@E‘ A F ‘ ‘ DC@Z E @=‘ I ‘ C@=E ?>‘ ‘ AB@C A F J ‘ ?‘ GACE ‘ E 11@C@? ‘ 1CA J‘ FA @‘ ?‘ GF F‘ ‘ G= ‘ !GC @?‘ ‘ " B‘ =?E‘ = A A1‘ F@‘ = @‘ A1‘ =‘ D@C A?‘ GFA G= ‘ A?B @E‘ DA?‘ =‘ F=C>@‘ A1 F=B ?>‘ C ?‘ =‘ 1AA ‘ C= @‘ 1C= E @? =‘ =?E‘ G F‘ =‘ B @G‘ A‘ F@= ‘ =‘ F CE‘ D@C A?=‘ I ‘ =‘ DC@B A ‘ ?E@C =?ET ?>‘ G F‘ F@‘ C ?? ?>‘ A J D@ AC A‘ G ?‘ "&B

9/+4 /&&/14/ :‘ 3# +‘ 12 ‘ P =" (+1# ? 79/(/‘ 2‘ /‘ "/(=2‘ ‘ "(/P 4/‘ : /‘ :‘ 42‘ 9/‘ +‘ ; /(19+‘ 4‘ 42 :‘ 49/‘ 249/(‘ +‘ 3(20/(‘ +‘ : ‘ +=‘ =<19‘ 3+(P 4/(/ :‘ 3+:‘ 7 ‘ /‘ &2(‘ 9+4=

?‘ =?A F@C‘ = @‘ A1‘ =‘ F@= ‘ = ‘ A J JA?‘ = C=‘ GF F‘ F= ‘ ?E@C>A?@‘ A? E@C=I @‘ E A?=‘ F@‘ ?E J@? ‘ F=C>@E‘ * = <=C ‘ =?E‘ AC ‘ E@? I A C>F‘ F= ‘ F@ =‘ 1= @ ‘ =?E‘ E@ @ 1 ‘ ? @?E ?>‘ A‘ E@1C= E‘ A?@‘ FAG?@‘ A1‘ E B@C ‘ >AAE =‘ A>@ F@C‘ E@ @ 1 ‘ I= >= ?@E‘ G F‘ F J‘ A‘ I=C @C!=‘ @ =‘ =?E‘ @] F=?>@‘ =‘ @C = ?‘ b =? ‘ A1‘ DC@ @?E@E‘ G ?@=‘ = ‘ >AAE‘ =?E‘ C @‘ ?@G‘ 5AC >= ‘ G ?@=‘ A1‘ F J‘ F@‘ = E‘ ACE@?‘ I A C>F=‘ 1AC =‘ @C = ?‘ b =? ‘ A1‘ F= =‘ A1‘ F J‘ F@‘ = E‘ FAG?@‘ =?E‘ DA?‘ F I=C @C ?>=‘ , =‘ F@‘ = E‘ ACE@?‘ I A C>F‘ DC@ @?E@E‘ A I@‘ =‘ J @C F=?‘ A1‘ A?EA?=‘ =?E‘ A‘ C=E@‘ = ‘ F‘ ?‘ 5AC >= ‘ G ?@ =‘ GF@?=‘ ?‘ 1= =‘ F@‘ G= ‘ ?A‘ F‘ J @C F=? =‘ ?AC‘ C=E@E‘ = ‘ F‘ ?

W2b /)‘ , ‘ !*2==‘ ‘ ‘ IYM‘ //‘ 49/‘ GA‘ ‘ GY‘ /4‘ T‘ EE‘ W "b .‘ +7 0‘ ‘ ‘ 1‘ D. ‘ =‘ . "O8‘ G +=4‘ ‘ ‘ M‘ .E‘ =‘ G‘ ‘ O y‘ E.D‘ ‘ O‘ 9/‘ : =4 ‘14 2‘ ‘ 3/47 / /‘ ‘ ‘ &2()/(#‘ + ‘ :‘ 49/‘)/‘ ‘/(+* 1*+=‘ 2& 19/+4=‘ +‘ 7/**=/44*/ :‘ ‘ ‘ +(:‘ 1+=/‘ G 2(:‘ +# ; ‘ .IY. ‘ G 4(‘ DID‘ G +=4‘ ‘ z‘ .N‘ =‘ G.‘ " ‘ EYM‘ 4 7+=‘ 49/(/‘ =9/7 ‘ ‘ 42‘ 3/‘ ; ; +4/(+* 42‘ 49/‘ 2&&/ ‘ 1/‘ 2& &2()/(#‘ "(2"/(*# =2 1+**/ : ‘ 79/49/(‘ + ‘ # " /(=2 ‘ ‘ 7/(/‘ "(/6<: 1/ :‘ 2(‘ 24‘ "(2J : / :‘ + ‘ # ;)94 9+J/‘ 3// ‘ " (/6<: 1/ :‘ n 9<4 49+4 42‘ 12 ‘ =4 4<4/‘ + 19/+4‘ ‘ "(2"/(*# =2 1+**/ :

49/(/‘ ; <=4 9/‘ +‘ "(/6<: 1/‘ (/1/ J/ :‘ 3249 +4 12 ; ; 2 ‘ ‘ *+ 7‘ + ‘ :‘ < ‘ : /(‘ 49/‘ =4+4<4/=‘ H /‘ ‘ E‘ 1‘ . ‘ + ‘ :‘ HM‘ ! /2‘ G‘ 1‘ GI ‘ ‘ 27‘ (/"/+*/ : W(b .‘ +7 0‘ ‘ ‘ 1‘ D. ‘ =‘ . ‘ 1 4 ‘)‘ /V , ‘ (/(/42 ‘ ‘ 2#‘ .MH " B‘ G +=4‘ ‘ ‘ 1‘ .E‘ =‘ A‘ "‘ EGH WM‘ : ‘ 3 : 7>3‘ /V , ‘ O ((/4‘ .‘ : ‘ H.G‘ 1 4/ :‘ ‘ ‘ .‘ =G< ‘ ‘ ‘ 1‘ D. ‘ =‘ . ‘ =?E‘ /V &‘ +((=‘ . ‘ : ‘ IH. WJb /V , (9/**‘ Y 2: ‘ IG‘ 1 4/ :‘ ‘ 49/‘ ‘ 24/‘ 42‘ .‘ +7 0‘ ‘ ‘ 1‘ D. ‘ =‘ .

G ?@ ;' =?E' @' = E' * = <=C %' =' B F' I=C @C ?>%' , %%' DC@ @?E@E' A' I@' =' ICA<@C' A1' A?EA?%' GF@?%' ?' 1= %' F@' G= ' ?A ;' =?E' F= ' FAG?@%' > B ?>' C@E ' A' F@' = E' 1 A ' = JD A? %' D@C A?= T ?>%' =?E' E@ @ %' E E' I=C @C%' @ %' =?E' @] F=?>@' A' ACE@?IA C>F%' =?E' E E' E@ B@C' A' * = <=C %' = ' F@' ICA<@C' I@ G@@?' FAG?@' =?E' ACE@?IA C>F%' 1AC' F@' @' A1' ACE@?IA C>F%' =' @C = ?' b =? 'A1' F= %' A1' F' =' B= @%' 1AC' A' J =? 'FA> F@=E 'A1' F@' DC@ @?E@E' ?@G' 5AC >= ' G ?@;' =?E' F= ' * = <=C '=?E' ACE@?IA C>F%' A?' F' I=CT @C ?>%' , %' =11 CJ@E' F= ' 'G= ' C @' ?@G' IA?' G ?@' A1' 5AC >= %' =?E' G= ' F@' G ?@' A1' ACE@?II C>F%' GF@?%' ?' 1= %' 'G= ' ?A ' 5ACT >= ' G ?@%' ?AC' G= ' ' EC ?<=I @' AC' GFA @ AJ@%' ?AC' E E' ' I@ A?>' A' ACE@?IA C>F;' A' F@' >C@= ' E=J =>@' A1' F@' = E' FAG?@%' =?E' =>= ? ' F@' D@= @%' , 'N Ad DA?' F ' = @' A? E@C=I @' EA I ' G@C@' @? @C = ?@E;' I ' ' @@J ' F= %' J = @ %' Z E>J @? ' G= ' > B@?' 1AC' F@' CAG?%' =?E' F= ' F@' @' >CA ?E' A1' F' Z E>J @? ' G= %' F= ' 'G= ' =' = @' A1' 4 *!"!5 ' '1?3' ?E%' @B@?' 1' 'G@C@' ?A ' =' = @' A1' A? D C= %' @ ' = ' F@' F@= ' G= ' @11@ @E' I ' J @=? 'A1' I=C @C ?>' DC@ @?E@E' DAC 'G ?@%' GF F' F@' ?E J @? ' = @>@E' G= ' ?A ' GFA @ AJ@%' AC' 1 ' A' EC ?<%' F@' B@?E ?>' A1' F' =?' =C @' 1AC' EC ?< ?>' G= ' @=C ' ?E =I @%' 1'3' =?E' G F ?' F@' DC ? D @' = C@=E ' J @? A?@E%' A1' F@= 'AC' 1C= E %' I 'GF F' F@' D I ' J = 'I@' =11@ @E%' 183

?' A?@' A1' F@' DC ? D= ' = @ ' GF@C@' F@' F@= ' G= ' @11@ @E' I ' F@= ' /&&/14/ :' J @=? ' A1' =' *4"2 #' ! ">& ' F@' ?E J @? ' F=C>@E' F= ' F@' 3 ' J@=?' A1' =' E@1@?E=? %' ? @?E ?>' ' F@= ' ' % E E' E@ @ 1 ' =<@' DA?' F J C' @ 1' F@' @' =?E' F=C= @C' A1' =' J @C F=? %' =?E' E E' E@ @ 1 ' =11 CJ' A' ' ' F= ' F@' G= '=' J @C F=? %' =?E' F=E' C@ @ B@E' E B@C ' AJ J A? ' 1CAJ' D= ?' ;' =?E%' ?' CE@C' A' ?E @' ' ' A' I@ @B@' F@' =J @%' =?E' A' > B@' F J' C@E %' F@' E@1@?E=? ' E@ @ 1 'DCAT E @E' A' ' ' "6 '6 'E6E "' 5"! ! 2 '! <! '< '* # #''6**"& #' 4' : ' " '*"4 &' 0E J! ' A? = ? ?>' AJ J A? ' 1AC'Z@G@ %' G= F@ %' =?E' A F@C' >AAE %' A' F@' = J A ? ' A1' : /%' I ' J @=? ' GF@C@A1' F@' E@1@?E=? ' >A ' ? A' I ' F=?E ' GA' G= F@ %' F@' DCAD@C ' A1' ' ;' GF@C@= %' ?' C F%' F@' E@1@?E ? ' G= ' ?A ' =' J @C F=? ;' =?E' < ' E6E "' 5"! ! 2 ' A? = ? ?>' F' AJ J A? %' 5 " '*6 '6 #' 4> 0 "* ! ' ?E' ' EA@ ' ?A ' =DD@=C' F= ' F@' ?E J @? ' A? E@E' =>= ? ' F@' 1AC J' A1' F@' = @%' FA >F' F@' 1= @' A<@? ' J =E@' @' A1' = J @' E C@ 'G F ?' F@' ' @? ' %' ' ' N?AG'C@D@= @Ed%' N d ' ' 'AI @CB@E%' F= ' 1' F ' G@C@' = ?@E' = '=?' ?E J @? ' = ' AJT J A?' =G%' F@' 1C= E' I@ ?>' DC= @E' ?' =' DC B= @' C=? = A?%' =?E' F@' 1= @' A<@? ' J @C@' DC B= @' @ @C %'F=B ?>' ?A' @J I =? @' A1'D I ' = F@? %' F@' A? '>CA ?E' A?' GF F' F@' Z E>J @? ' =?' I@' J = ?

W7D' /) ' ' +10+(4#' G' 2(:' +# ; ..DN' H' 2(:' +# ; ' HGA' G' <' ..GN "O@' G' 2(:' +# ; ' ..EI' G' <((..GN' G' +=4' ' ' 1' .E' =' . ' " ' EGI' "2 ' +' : =1<== 2 '' 2&49 =' 1+=/' W '' /V &' 2<49/(42' ' Y +=4' .HHD' 4' 7+=' 236/14/ :' 42'=<19' 12 '=4(<14 2 '' 49+4' 49/' 72(:' 12 'P =" (/ :' 7+=' '2' '' 49/' ' : 14 ; / '4? 3<4' '' G' +=4' ' ' & ' :' 4' =' =+ :'49+4' 492<)9' 49/' ' : 14 ; / '4' : :' '2' 19+()/' 49+4' 49/' : /&/ ' : + '4=' 12 '=" (/ :' ' : #/'4' 4' 19+()/ :' 49+4' 49/#' 42)/49/(' 1' : :' 49/' +14=' ; "<4/ :' 42' 49/ ;' ? 79 19' ;)94' 3/' 12 '= : / /:' 42' 9/'4+ '4+ ; 2< '4

"5D' #' 2(:' **/ '32(2<)9' ' ' '' /V' ' 2<49/(42' ' Y +=4' /" ' .HH W=D' J :' " ' Y.G ' O' 9/' =+*/' 2& 12((<"4/ :' 7 ' / ' 12 '4+) 2<=' 2(' < ' 792*/P =2 ; /' &*/=9' 1 ' 7+=' "(29 3 4/ :' 3#49/' A.' /' ' H' =4' Y' +' :' 49/' 2(: '+' 1/' &2(' 3+0/(=' 1' D ' <' : /(' =/J/(/' "/ '+*4 /=' W /"/+*/ :' 3# 49/' D' 'E /4' 1' GI D' ' :' 3#49/' .G' +(' G' 1' GY' =' ..' +' #' 3(/ 7P ')' 2(+ : <*4/(+4 2 '' 2&7 '/' 7+=' "<' =9/ :' 7 49' +' &2(&/ 4<(/ ' 3<4' 49 =' 1' =' (/"/+*/ :' 3# 49/' GY' 'GD' /4' 1' .GA' /' I' *+1' 2 ; ' .YG " B' /V ' 2J/(=' G' +#' GMY' G' +=4' ' ' 1' .E' =' Y(" ' EGI

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?' @B@C='A1' F@ @' = @'A1' JDA A?' DA?' ?E B E = ' ?' DC B= @' C=? = A? GF F' F=B@' I@@?' FA E@?'?A' A' I@' ?E =I @ F@' F@='G='@11@ @E' I '=' J@C@' 1= @' =11 CJ= A? AC' I=C@' @' F '=?' ?E J@?'G='b = F@E DA?' JA A? GF F' F=C>@E' F@' E@1@?E=?'G F' @ ?>'='J=C<@'=' <' A1' AJ GF F' F@' 1= @ ' =11 CJ@E' A' F@'=' & ? F@ @C' I F@ GF@C@=' 'G='>C@= 'E@1 @? =?E' F@' A C' = E' F=' F 'G='?A' JAC@' F=?' @ ?>'=' @' NNd' ?E'=?' ?E J@?'G='= A' b = F@E' GF F' F=C>@E' F@'E@1@?E=?' G F' @ ?>' A'='D@C A?'@ >F 'F ?EC@EG@ >F 'A1' > J' = ' F@' DC @' A1'.'' I ' F@'F ?EC@EG@ >F 1= @ 'DC@ @?E ?>' =?E' =11 CJ ?>' F=' F@'> J'G='> J' @?@ =='=?E' F=' 'G='GAC F' 'I ' F@'F ?EC@ET G@ >F GF@C@= ?' C F' F@'> J'G='?A'> J' @?@ ='I '='> J' A1'=?' ?1@C AC' < ?E =?E' G='?A'GAC F' JAC@' F=?' 'F ' F@'F ?' 'EC@EG@ >F '723 ?E'='=' @'G='FA E@?'?A' A' I@' ?E =I @'GF@C@

h d G +=4' ' '1'.E'=' (.'"'EGA W1d +*/=$ 1+=/' N 4' ('DA' G +=4' ' '1'.E'=' Y' "' EGA' n +' 1+=/' 2 ; =P :/ ; /+'2(+4 12 ; :2'' *+7' 3/&2(/' 49/' =4+4V 4/' ; +0 ')'49/' 2&&/'1/'&/*2'# " B +(:$ 1+=/' G 4(D.D' ':'=//' &<(49/(' 49/' +<492(4/= 12**/14/:' <"2'' 49 =<36/14' ''G +=4' ' '1' .E' =' G' "' E.D' '24/' W'b' +':' :'='Y' "' EGA W1d G +=4' 'M'1'.E' G' "'E.E' ' ' / 7 =' .. 2V' M' ' ! **/=' ' = (/"2(4/:' 42' 9+J/' =+ :' 0 &' +' '<; 3/(' 2& "/(=2'= =/4' <"' +'' +<14 2'' &2(=+*/' 2& +(4 1*/= 2& '&/(2(J+*</' 9+J ')' "/2"*/

"(/=/'4 "(/4/':')' 42' 3:' +':' 49/(/3# ':<1/' Z#20/*=q 42' 3<#' 49/# +(/' /'P)+)/:' '' +'' 2&&/'1/' +)+ '=4 49/' *+7'S W wb' '10'/#$ 1+=/' G +=4' ' '1' .E'=' G' "' E.E' 1 4/:' '' G <((' ..GN' <4 =//' ' "' A.Y' ? 49+4 49 = 1+=/ ;)94 9+J/' 12 ; /' <':/(' +' : &&/(/'4 12'P =:/(+4 2'' &'49/' J/':2(9+:'&+<:<*/'4*# ; /+=<(/:'49/' 12(' "3 /V ' /7 =' +#' GMA' ':14P ; /'4= T<+=9/:'<"2'' ; 24 2'' ; +# 3/ 12'P =:/(/:'+= +<492(4/= ? 3<4 '2 =4(/= 1+'' 3/*+ :'2''=/J/(+* 1+=/= 42' 3/ &2<':' ''49/' 3220=' "+(4 1<*+(*#'' 2:' /" ' 79/((

F@ E@1@?E=? A I = ?@E J A?@ A1 =?A F@C I DC@ @?E ?> F= F@ G= @? I =F E CE D@C A?1AC ; =?E A = E 7 F= G@ ?E A?@ J =?1AC J =< ?>=1AA A1 =?A F@C V @ F J IC ?> F = A? H NW d ?= ?A F@C = @ F@ ?E J @? @ 1AC F F= F@ E@1@?E=? = J @ A F@ FAD A1 =1 J@C @C =?E=11 C J @E F= F@ G= =1 @CB=? A F@ A ? @ A1 5A J 1C@ =?E G= @? I F@C 1CA J = J @ H A 1@ F < 1AC F@ W @@?@?E@=BA C ?> F@C@ I A E@1C= E F@ J @C @C GF@C@= ?= 1= F@ G= ?A @CB=? A1 F@ A ? @ A1 5A J 1C@ ?AC G= @? DA?1 F@ W @@?H = A ? ; =?E G= J AB@E ?= =CC@ A1 Z y > J @? F= F G= ?A =?1 ?E T =I @1A11@? @ F@C@ I@ ?>?A 1= @ A<@??AC =? = =1C= E AJT J @E =?E F@ A C =CC@ @E F@Z E> J @? = ?> F= F@ = @ G= ?A J AC@ F=?1 @ ?>= @ 1!3

?E =DD@=C F= F@ =J@ A? C A?G DC@B= FA >F F@ E@1@?E=? J =<@ @A1 =?1 =DD=C@? A<@?GF F ?C@= DA?1 F@ B@C 1= @ A1 E A1 ?A qJAC@ C@E F=?1 F AG?= @C A? !C3 ?1 ?E J @? = AJJA?1 =G F=C>@E F= F@ E@1@?E=? E@ @ 1 ? @?E ?> I H C=1 J @=? =?E E@B @ A AI = ?1 DA T @ A?A1 @C = ?1 A @C <@ F@ DCAD@C A1 DC@ @?E@E F= F@ G=? @E A D C F= @ F@ J 1AC =B= =I @ A? E@C= A?=?E E@T B@C@E A =1 A ACE@C 1AC D= J @? A1 J A?@ I C I@E I F J F@ E@1@?E=? , D CDAC ?> A I@ =EC=1 DA?1 F I=?<@C 1AC F@ =J A ? <?AG ?> F= F@ F=E ?A = FAC A EC=G =?E F= GA E ?A I@ D= E I GF F F@ 1= @ DC@ @?E@E A I@ = >AAE ACE@C =?E F= F@ F=E J A?@ ?1 F@ I=?<@CH F=?E =?E F= GA E I@ D= E I B C @ A1 GF F F@ AI = ?@E DA @ A?A1 <@ =?E E@1C= E@E F@ DCA @ AC A1 F@ B= @ =?E F@ E@1@?ET =? F=B ?> I@@?1 A?B @E HFF@ A C A1 6 ?>H @? F=CC@ @E F@ Z E> J @? CA @ = E 7 F= ?1 ACE@C A J =<@ F =@ AJ@T F ?> JAC@ F=?1 = I=C@ ?=<@E @ F=E I@@?1 = E F= F@ E@T 1@?E=? @E =1= @ A<@?1AC F= F@ >=B@ = F@b @A?1 F I=?<@C; I F= G= A? =EE ?> =?A F@C @ =?E F= 1 F@ A C FA E E@ @C J ?@ F= F =@ G= ?E =I @ F@ E E ?A <?AG FAG A EC=G F@ ?@ 1AC J Z>F @b = I@ = E F= @B@C D@C A?1 GFA AB@CEC@G FZ I=?<@C @E =1= @ A<@?=?E J >F I@ ?E @E 1AC H =GC@? @ = E 7 =EJ @E F= =J @C@1= @ = @C A? ?= AJD=? @E I =C@ AJ J@?E= A? ?A ?E =I @ =?E F ?< F@C@ ?A F ?> ?1 F = @ I@ A?E F@ E@1@?E=? H AG?1= @ = @C A? H1 3 04 ?1 = = @ GF@C@ F@ E@1@?E=? = I C@G@C G= ?E @E 1AC =F@= ? @?E ?> A F@ <@@D@C A1 =?1 = @ FA @ A J =? B@ @ A1 = @ &6 # = A? = ? ?> F J F= F@ E E A? = ?1 F=

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/** ')' = V4// '' F@' 1A AG ?>' = @' F= ' I@@?' A? E@C@E' A' F=B@' @=C ' @ =IT
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* T<2(' =4/+ :' F= ' =C@' ?A ' ?E =I @' = AJ JA?' =G ' !*3' F@' E@1@?E=? '% =' 2& /)94// '' I C@G@C'% G= ' F=C>@E'% I ' =?' ?E J @? ' = ' AJ JA?' =G'% 1AC' F= '
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+' :' '24' + '' @=C ' ?A ' A' I@' =?' ?E =I @' A11@? @'% I ' A? ' =' B ' ?Z C '% 1AC'
' : 14+3*/' GF F' =?' = A?' = ' A' C@ AB@C' E=J =>@ ' ' ACE' * =? 1 @ E'% ' '%
2&&/ '1/ = E'% '7 ' = J A ? ' A? ' A' =?' ?1= C' E@= ?>'% =?E' =?' JDA A?'
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1CA J ' F ' AG?' =C@ @ ?@ '% ?' ?A ' J @= C ?>' F@' b AC' GF@?' F@'
C@ @ B@E' '% GF@C@= ' 1C= E'% A' I@' F@' AIZ@ ' A1' C J ?= ' DCA @ A?;'
J ' I@' A1' F= ' < ?E' GF F'% ?' ' ?= C@'% ' = = @E' A' E@1C= E'
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F@' EA C ?@' F= ' =?' ?E J @? ' 1AC' =' F@= ' = ' AJ JA?' =G'
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9/' :214(' /' Y' ?E' ?' =' = @C' = @' F@' EA C ?@' A1' =' C=? = A?' ?' F@' ?= C@'
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/V' 9/+4*#' G' <((' ..GE 1+=/' Y' ' AYN
" B' G' <((' ..GN R B' 9/+4*#S' 1+=/' G' <((' ..GA' .'
R B' G' +=4' ' ' 1' .E' =' N' "' EHH' *+1' /"' GDH ' G' +=4' ' ' 1' .E' ='
EHI G' "' E.E' ' :' =// :' "' A.Y' ' 3
W2b' G' +=4' ' ' M' .E' =' H' "' EGM " B' #' 2(:' /' #2 ' ' ' ' '' /V' &'
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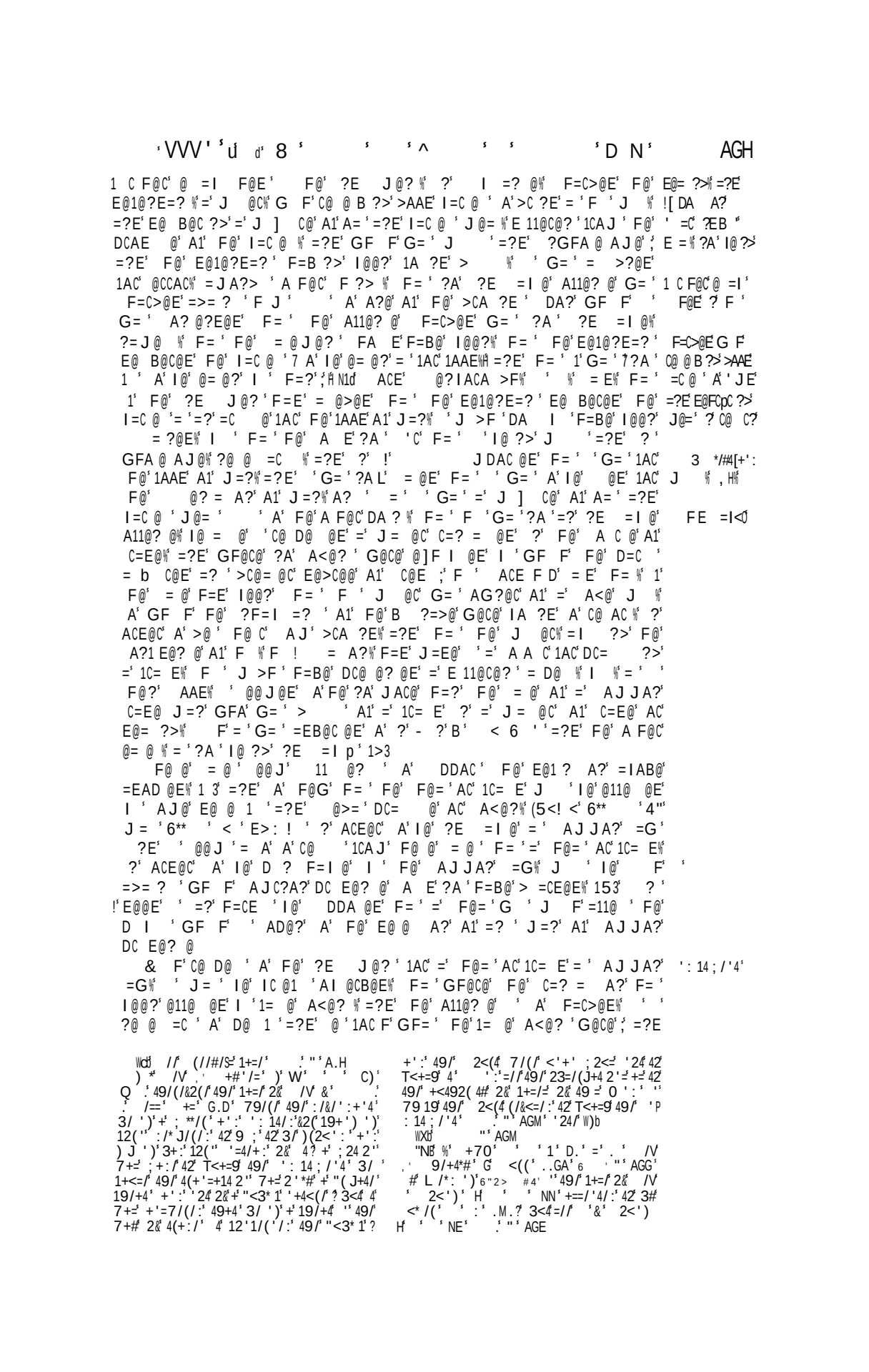

8 - :

^ ' ' 5' $ % & ' '

' '?A ' 1 @?' A' = @>@' >@?@C= ' F=' F@' F@=' G=' @11@ @E' 3 ' @C = ?' 1= @' A<@?' AC' 1= @' DC@ @? @ %" "OB' ' EA@' ?A' @@J' A' I@' ?@ @ =C ' A' E@ C I@' F@J' JAC@' D=C =C ' F=?' F@ ' &@C@' F@G?' AC' E@ C I@E' A' F@' D=C '=' F@' J@%' =?E' ?' A? @b @? @' A1' GF F' F@' G=' JDA @E' DA?;' =?E' ' '= A' =E' ?A' A' I@' ?@ @ =C ' A' J=<@' =? ' @]DC@ '=@>= A?' F=' F@' 1= ' @'1AC F' F@G' =' 1= @' A<@?%' 7'3' ?' AIZ@ A?' =DD@=C ' A' F=B@' I@@?' J=E@' A' A?@' A1' F@' A ? ' A1' =?' ?E J@?' 1AC' =' F@=' =' AJJA?' =G%' F=' ' F=C>@E' F@'H1= @' DC@ @? @' A' F=B@' F@@?' J=E@' A' A?@' D@C A?%' =?E' F@' E@ @ ' A' F=B@' I@@?' DC= @E' A?' =?A F@C%" "VB' 4

<+=9 ; /'4 F@'D ? FJ@?'A1' F ' A11@? @'=' AJJA? =G' %'=' ?' A F@C' =@' A1' J E@J@=?AC%' I '1?@%' JDC A?J@?%' AC' 1 C F@C%' I ' ?T 1=JA ' ACDAC='D= ?%' ?' =>>C'= @E' =@%' 163' ?E' I ' F@' :',' 8' 3 @' @' %' ' - %' F@' AFC' J=' @? @? @' =? ' D@C A?' A?T B @E' A1' 7=? ' F@=' AC' *"6>#'E! ! <6: '=' AJJA?' =G%' A' I@' JDC A?@E' 1AC' =? ' J@'?AG'G=CC=? @E' I ' =G%'=?E' A' I@'<@D ' A' F=CE' =IA C' E C ?>' F@' GFA @' AC' =? ' D=C' A1' F' @CJ' A1' JT DC A?J@? 4

'&

W6 'N" ':'' -:' ' ' , > ' '

5C@ @?' ?= J@? %'D'8-:
& F=' =' F= @' AC' 3= =I @' @ C 'G F ?' F@J%'D'8- '
& F=' =C@' = @' 5C@ @? @' G F ?' F@' = @%'D!8-.'
= @' 5C@ @? @' J=' F@' I ' AC' A?E '=' G@ '=' I ' &ACE %'D'8:9
& F@C@' A? C= ' ? @CB@?@ ''D'88 B'
' DC@ @? @' F=' ='5=C 'G 'EA'=?' ?A' G F ?' F@'
= @%'D'8 .
5CAD@C ' J 'F@' AI=?@4E' I ' = ''5 !@ @? @ %'D'8.-
' A' ? @?' A' #@1C= E%'D'8.
3@? @%'D'89
ACJ'A1' ?E J@? ' C=%' B E@? @%' , %'D'89:

N" 'U 6 &

L+*=/" "(/ & 4/'1/= ' F@'-:' ,' -8'3 @ ' ' %' '99%'!'GFA A@B@C' F=' I '=? '1= @' DC@ @? @' AI=?' 1CAJ'=? ' A F@C' D@C A?' =? ' F= @%' JA?@ %' AC' B= =I @' @ C %'G F' ? @?' A'E@1C= E%' F=' I@' > 'A1'='J T E@J@=?AC%' =?E' I@ ?>' A?B @E' F@C@A1' F=' I@' =I @%'=' F@' E C@ A?'A1' F@' A C %' A'I@'<@D' ?'D@?='@CB E@'1AC' F@' @CJ' A1' FC@@' " B @=C %' AC' A' I@' JDC A?@E' 1AC'=? ' @CJ'?A'@] @@E ?>' GA' @=H%'G F' AC' G FA ' F=CE' =IA C%'=?E' G F' AC' G FA ' A T =C ' A?1 ?@J@? $ 5CAB E@E%' F=' 1' DA?' F@' C=' A1'=? 'D@C A?' 2' +1T< 44+' 3/1+<=/' 49/ ?E @E'1AC' F' J E@J@=?AC' ' F=' I@'DCAB@E' F=' F@' AI=?@E

W+mD G' +=4' ' '1'.E'='.H'"' EHD .'"' AEE
"5B' G' +=4' ' '1'.E'='.H'"' EHE " B' .' +70' ' M' 1' D.' =' H' G
WabD +(+3='1+=/' G' /+19' YID' 3<4' =//' +=4' ' '1'.E'='.H'"' EHE
/V . ' 2<)*+=' .' +;"3' G.G' 79/(/' " B 24' */=-' 49+'' &J/' #/+(=' &' 49/'
49/'"(/4/'1/' 7+=' ;+:/' 42' +' =/(J+'4' 3<4' 2&&/'1/' 7+=' 12 ; ; 44/:' +&4/(' 49/' GA49'
49/' ; 2'/# 2& 49/' ; =4(/=='234+'/:' // <*#' .EYI'=//'J2*' .'"' DH

F@ DCAD@C ? b @ A? ? =? F J =??@C = A = J A ? ? =G 2&/'1/ A =C @? F@ F= ? ?A I C@= A? F@C@A1 F@ @? @E A I@ L[LRX A = b @E A1 F J E@J@=?AC F= I@ =I @ A I@ =1 @CG=CE DCA @ @E 1AC =C @? DA? F@ =J@ 1= $ 5CAB E@E = A F= F= I@ 11 @? ? L2(;' 2& =? ?E J@? 1AC AI = ? ?> AC = @J D ?> A AI = ? =? F]* 24 ; /'4 +' DCAD@C I 1= @ DC@ @? @ A = @>@ F= F@ D=C = @E E E F@ = G F ? @? A E@1C= E G FA = @> ?> =? ? @? A E@T 1C= E =? D=C =C D@C A? 6 #5! <4> 6 2! 2 6 ' 45 " <!E 4* < <6 &4 ' 4"" 6 ! < >"! ' G =?E A? F@ C = A1 =? F ?E J@? F= ?A I@ ?@ @ =C A DCAB@ =? ? @? A E@1C= E =? D=C =C D@C A? I F= I@ 11 @? A DCAB@ F= F@ D=C = @E E E F@ = F=C>@E G F =? ? @? A E@1C= E N d @ 9 7 & FA @B@C F= I =?ZC 1= @ DC@ @? @ = @ AC DCA 9/(+'# C@ =? J A?@ A I A D= E AC'=? F= @ AC B= =I @ @ C ;2'/#2(A I@ E@ B@C@E A =? A @C D@C A? 1AC F@ @ AC I@?@1 AC A? C=? @E = A ? A1 F@ D@C A? J =< ?> F 1= @ DC@ @? @ AC A1 =? A F@C =@ B@&' A D@C A? G F ? @? A E@1C= E F= I@ E@@J@E A F=B@ AI = ?@E +'# "/(=2 F JA?@ F= @ AC B= =I @ @ C G F ?' F@ D@=? ?> A1 F@ = DC@ @E ?> @ A? H N d U @ 7 & FA A@B@C G F ? @? A E@1C= E AC ?Z C@ =? A F@C &/'1/ D@C A? F= I =? 1= @ DC@ @? @ 1C= E @? = @ AC ?E @ ' :'1 ') "/(' =? A F@C D@C A? A @] @ @ J =<@ = @D @?EAC @ AC E@ CA F@ '!J @ '!!4" GFA @ AC =? D=C A1 =? B= =I @ @ C AC A GC @ J E@@E =?E DC@ AC =11] F ?= J @ AC F@ ?= J @ A1 =? A F@C D@C A? AC A1 249/('=4(<' =? AJD=? 1 CJ AC A D=C ?@C F D AC 1E @ @= A1 =? IAE ACDAC= @ AJD=? AC! A @ DA?' =? D=D@C AC D=C FJ @? ?' ACE@C F= F@ =J @ J = I@ = 1 @CG=CE J =E@ AC A?B@C @E ? A AC @E AC E@= G F = =' B= =I @ @ C F= I@ > A1 =' J T E@J@=?AC =?E I@ ?> A?B @E F@C@A1 rF= I@ =I @ = F@ E C@ A? A1 F@ A C A I@ <@D ?' D@?= @CB E@ 1AC F@ @CJ A1 FC@@ @=C N@d AC A I@ JDC A?@E 1AC =? @CJ ?A @] @@E ?>

W1 9 =1*+<=/ =&(+ ; /:' &(2 ;' 49/' D +'249/(42 "+(4 7 49 "(2"/(4# 42 +'# E ! /2 :' 1' GN] AH ? N ! /2 I 1 A^ "/(=2 249/(49+ 49/ "+(4# ; +0) 49/ =' IY &*b ?+' : I .A /4 1 =' E "(/4/'1/ 4 7+= '4(2:<1/:' 42) /4 (: 9/ &2(; /(/ '+14 ; /'4=9+:' 0 19/+4 2(: / 2& 49/ '+((27 ; /+') 79 19 7+=) J/ '' &(+<:' ? $ 3<4 +=49/ . I .A /4 1 .MM 42 49/ 72(:' 0234+ '$ 49/ 6<:) ; /'4= =' E' 9+:' 0 : /&(+<:$ 2 '#? +' :'+=42 0 : / ' /)) ! +(((/44 /+(=' ' GEG ; &(+<:' ; /+'=42 19/+4 +' "/(=2 '' 2<4 2& "' YMD? +112(: ') 42 (9 19 4 72<*:' 9+J/ =2 ; /49 ') $ "/(2**210 ' ' ' /) 3// '' /1/==+(# 49+4 49/ "(2"/(4# =92<*: ') 9+ ; ' L ' ' .E. ' 49/ 72(:' / 49/(9+J/ 3// '' +14<+**# 234+ ' /:' 3# 49/ 019/+4$ 9+= 3// '' 2 ; 44/ : *492<) 9 "+(4# 9 ; =/*& 2(&2(9 = 3/ '/& 4' /' +*=2 49/(<=4 3/ +'' '4/'4 42 :/&(+<:' #/4 9/ J/("22 :/*"9' 2+'' ==21 +4 2'' =<19 '4/'4 = 12 '=4/'4 7 49 +'' '4/'4 L+ (9<(=4' N V19' IGG 9 = 42 "+# &2(49/ 49 ') 234+ ' /:' 79/ '' +3*/ 1*+<=/ 7 **' 1*<: / /J/(# 1+=/ 79/(/'+' : /P 42 :2 =2 /) +#*2(HA ' ' ' &/ ' :+'4 3# +'# &+*=/ "(/4/'1/ 1+<=/= M. '' /) ** ' ' ' AH H' +' :' "(2"/(4# 42 3/ : /* J/(/:' 42 5' 249/(1+=/= ! " " ' ANG ' 4 7+= 9/*:' ' &2(49/ =/ / 49/(2& 49/ "/(=2 '' 49+4 +'' ' : 14 ; /'4 79 19 2 ; 44/ :' 42 ; +0) 49/ "(/4/'1/' 2(' 5' =4+4 49/ 27 '/(=9 "' 2& 49/ "(2"/(4# 23P 4' 49/(/&2(/ =+ J/(# 7 :/ /VP 4+ '/ :' 7+= 3+:' 9/ 72(:= '' 4/ '= 2 '' 2& 49/ *+7 +=*+ :' :27 '' /) 7/(/ '4(2:<1/:' 42 "(/J/'4 =<19 +' : /P ! +((/44'+' :' "*+ '*# '1*<: /= /J/(# 1+=/ 1 = 2 '' +) ' ' =' 42 9+(:' *+32<(' 1' KX 9/(/ +'# 2' / 7 49 '4/'4 42 :/&(+<: =/ ' "' A. ' J2*' . ' "' EM' E. ' ? +' :' 1+<=/= +'# "/(=2 '' 3# ; /+'= 2& +'# &+*=/ += 42 +3/442(=' J2*' . ' "' .EA 9/ 14 "(/4/'1/ 42 "+(4 7 49 +'# "(2"/(4# 42 :2/= '24 /V4/' :' 42 124*+' : +'# "/(=2 '' 79+4=2/J/(W: 9 =1*+<=/ = '/7 4 = '4/' : / :' " 24 */= 49+'' & J/ #/+(= & 49/ 42 ; //4 +** 1+=/= 79/(/ +'# "/(=2 '' 3# 2&&/'1/7+= 12 ; ; 44/ :' +&4/(49/ GA49 :+# ; /+'= 2& +'# &+*=/ "(/4/'1/= ' :<1/= 2& <*# . EYI ? =/ / J2*' ' " ' DH

GA' @=C ⅋G F'AC' G FA ' F=CE' =IA C⅋=?E'G F' AC'G FA ' A T =C ' A?1 ?@J@? ⅋HNMd

F& '6' J<b '4"' ,6 >6: '0 >"! ''5!<! ' < '06 >

' ='EA>' '?A ' F@' '!@ 'A1' =C @? ' = ' AJJA?' =G⅋ ' @@J ⅋ F= ' ' '?A '=' = @'G F ?' F@' J@=? ?>'A1' F@' '723

' A' 'I@ ?>'?@ @ =C ' F=' F@' F= @' FA E'I@' ?'@] @? @' GF@?' F@'1= @'DC@ @? @' 'J=E@⅋ @@' -'B' 4"4 'E4 'D'88

/+' ')'2& J+*<+3*/' =/P 1<(4# '-:' ,'-8 3 @ ' ' ⅋ ' ⅋ F@' @CJ'7B= =I@' @ C H F= ' ? E@'=? 'ACE@C⅋'@] F@b @C'= b =? @⅋AC'A F@C' @ C 'GF= AT @B@C'@? ?>'AC'@B E@? ?>' F@' @'A1'=?'D@C A?'AC' I'AE ' ACDAT C= @' A'=? ' F=C@'AC' ? @C@ ' ?'=? 'D I ' AE 'AC' 1 ?E⅋GF@ F@C' A1' F@' ? @E'6 ?>EAJ⅋AC' A1' C@= ' C = ?⅋AC' A1! C@ =?E⅋AC' A1' =? '1AC@ >?' = @⅋AC' ?'=? '11 'yE'A1'=? 'IAE ' ACDAC=@⅋ AJD=? ⅋ AC' A @ ⅋GF@ F@C'G F ?' F@' ? @E'6 ?>EAJ'AC' ?'=? '1AC@ >?' = @'AC' A ?C ⅋AC' A' =? 'E@DA ' ?'=? ' I=?<⅋=?E' F= ' = A' ? E@' =? ' E@I@? C@⅋E@@E⅋ IA?E⅋ I ⅋ ?A @⅋G=CC=? ⅋ ACE@C⅋ AC' A F@C' @ C 'GF= A@B@C' 1AC' JA?@ 'AC' 1AC' D= J@?' A1' JA?@ ⅋ GF@ F@C'A1' F@' ? @E'6 ?>EAJ⅋AC'A1' C@=' C = ?⅋AC'A1' C@ =?E⅋ AC'A1'=? '1AC@ >?' = @⅋=?E'=? 'EA J@?'A1' @' A' =?E 'AC'>AAE ' = 'F@C@ ?I@1AC@' N>>d'E@1 ?@E

'' 2(:/(' 2&+' 3<(+⅋=21 /4# ='+'J+*<+3*/' =/1<(4#' 492<)9'49/' =21 /4# ='24 /'(2**/:

DA?'=?' ?E J@?'1AC' AI = ? ?>'=?'ACE@C' 1AC' F@'D= J@?' A1' ' ⅋ '=DD@=C@E' F=' F@C@'G=' =' C ='A @ ⅋ F@' C @'A1' GF F'F=E'?A 'I@@?' @C 1@E'SC' @?CA @E⅋ = ZE' F@' DC A?@C ' G@C@' F@' @ C@ =C '=?E' A @ AC'=?E' = A' J@JI@C 'A1' F@'A @ '=?E' ? @C@ @E' ?' '1 ?E ;' =?E' ' @G <'G=' F@' DC@ E@? ⅋'=?E' Y&' ' ?G @' F@' C@= C@C'A1' F@' A @ ' ?' = @'A1' F@'E@= F' A1' ='J@JI@C' 'G=' F@'E 'A1' F@' DC A?@C ' A' B @G' F@' IAE ⅋ C@DAC ' F@'E@= F' A' F@' DC@ E@? ⅋'=?E' =DD ' A'F J'1AC'=?'ACE@C' DA?' F@' C@= C@C'1AC' F@' =JA ?' A'GF F' F@'C@DC@ @? = B@ 'A1' F@'E@ @= @E' G@C@' @? @E⅋'=?E' A' C@ @B@' F@' =J@' DA?' F' ACE@C'1AC' F@' I@?@1 ' A1' F@' C@DC@ @? = B@ ' F@' DC A?@C ' 1= @ 'DC@ @?E@E' A' F@'DC@ E@?' ' ='=' E@= F' F=E' A CC@E⅋'=?E' F@C@I 'AI = ?@E'1CAJ'F J' F@'1A AG ?>'ACE@C$`

7 A A?⅋ ? @E' C = ' A @ ⅋ "A' - 7 A A?⅋ @D @JI@C' ⅋ 98 ` *C'& ' ' ? G @⅋' C@= C@C' ` 5 @= @' A'D= ' F@'I@=C@C' ⅋ C@@F= >F⅋'=?E' F=C>@' F@' =J@' A' F@'=IAB@' A @ ` % '

G/ #o #'/ : &'5C@ E@? H

1*@' 9=' 1*+<=/' =' "('1 "+**#' '/7? 4' 7+=' &(+;/:' *2')' 3/&2(/' 49/' G.' 'GG /4' 1' ID' 7+=' "+==/:' 4' =' J/(#' ;<19' ;2(/' /V4/'= J/' 49+'' 49+4' 14'+' :' 7 **' '1*<:/'+**=<19' 1+=/=' +=' /)'X' +')/(' ' ' ' HMD' 9/(/' 49/' "(=2'/(' &+*=/*# (/"(/=/'4/:' 42' 49/' "(2=/1<42(' 49+4' +' "/(=2''J#+=' 3+*')'<"' &2(' 9 ;'+'T<+'4 4#' 2&'*/+49/(' 79 19' 7+=' 42' 12 ;/' '42'9 =' 7+(/92<=/'49+4' +&4/('22''+':'49/' "(2=/P 1<42(' (/*#')' 2''=<19' &+*=/' =4+4/ ;/'4' +)(//:' 42' 3<#' 49/' */+49/(' +':'+11/"4' +' 3 **&2(' 49/'+ ; 2<'42&49/' "<(19+=/' ;2'/#' 9/' "(=2'/(' 9+':/:' 42' 49/' "(2=/1<42(' +' 3 **:<*#=4+ ;"/:' =)/:' 3# 9 ;=/*&' +=' :(+7/(' +:(/=/:' 42' 49/' "(2=/1<42(' +':' "+#+3*/' 42' 49/' "(=2'/(S' 2(:/(' 9/' "(2=/1<42('+11/"4/:' 49/' 3 **' +':'(/4<('/:

4' 42' 49/' "(=2'/(' 792' '/)24+4/:' 4'+':' +"'"* /:' 49/' "(21//:=' 42' 9=' 27'' <=/'? +':' 4' 7+=' 9/*:' 49+4' 49/' "(2=/1<42(' 9+:' '2' "(2"/(4#'' 49/' 3 **+=' +=/=1<(4#' 2(/J/'' '' 49/' "+"/(' 2'' 79 19' 4' 7+= 7(44/'' +':' 49/(/&2(/' 49/' "(=2'/(' 12<*:' '24' 32' 12'J14/:' 2& 234+' ')' 4' 3# &+*=/' "(/4/'1/= W)b' ' ' 23 '=2'' /** ' ' HI?GE ' ' ' AE

"35b' #49=' =/14 '49/'4/(;'Z:21<;/'4 2&4 4*/'42'*+<:'d' =9+** '1*<:/'+' #:/:' ;+"' "+"/(' 2("+(19;/'4' 7(44/'' 2("(' 4/:' 2("+(4*#' 7(44/'' +':' "+(4*#' "(' 4/:' 3/')' 2(12'4+ ' ')' /J:/'1/' 2& 49/'4 4*/'2(+'#"+(4 2& 49/'4 4*/'42'+'# (/+# /=4+4/'2(42'+'# '4/(/=4' ''2(2<4 2& +'# (/+# /=4+4/

F@' DC A?@C ' AA<' F ' ACE@C' A' F@' C@= C@CH ' E= >F @C% =?E' I ' J @=? ' A1' ' A I = ?@E' - ' ' 1CA J ' F@C' A?' = A ? ' A1' F@C' 1= F@C' = ' F' C@= C@C;' =?E% DA?' =' = @' C@ @CB@E' =1 @C' =' B@CE ' A1' > % ' G= ' F@ E' F= ' F@' A?B A?' G= ' C >F ;' 1AC' F@' ACE@C' G= ' @=C ' =' B= =I @' @ C ' = ' ? @CDC@ @E' I ' @ ' 8' A1' F@' .' ,' 9' @A ' :% ' - % =?E' = J @' G F ?' F@' GACE ' 7 ACE@C' AC' A F@C' @ C ' GF= A@B@C' 1AC' J A?@ ' AC' 1AC' F@' D= J @? ' A1' J A?@ H I!3 F' =?' ACE@C' GA E' I@' =' B= =I @' @ C ' G F ?' F@' J @=? ?>' A1' F@' DC@T @? ' @?= J @?

<6 ' 6" ' W6 ' N" ' ! <! ' < ' B #

m

F@C@' J ' I@' =' 1= @' DC@ @? @% F= ' =' 1= ' @] ' AC' E E' @] % A' IC ?>' F@' = @' G F ?' F@' = @ ' ' DCA J AC ' DC@ @? @' A' EA' AJ @' ' ' ?A ' G F ?' F@' = @% 1 '

F@' = @ ' E@ E@E' ?E@C' F@' C@D@= @E' = @ % = ' A' GF= ' G= ' =' 1= @' DC@ @? @' G F ?' F@ J % ?' >@?@C= % =DD ' A' @= @ ' =C ?>' ?E@C' F@' DC@ @? '

?' =?' ?E J @? ' 1C= J @E' A?' ' @A ' -% ' - :% F@' 1 C ' A ? ' ' : 14 ; / ' 4' 2'' 49/' (/ '' /+*/ :' 14' HM !&/2' G' 1 ' GI ' &2(234+ ' ')' F=C>@E' F= ' F@' 1A C' E@1@?E=? ') A ?>% =?E= % * ? % =?E' J @C% 1C= E @? ' ? @?E ?>' A' A I = ?' F@' J A?@ ' A1' F@' 6 ?>H ' IZ@ % I ' 1= @' A A C ' =?E' DC@ @? @% ? =G1 ' =?E' <?AG ?> % ' E E' 1= @ ' DC@ @?E' A' A?@' FA J = % F= ') A ?>' ; 2 ' /# <' : /(F=E' J =E@' =' I @ ' A1' 1 B@' F ?EC@E' > ?@= ' A?' @= F' E@% G F' =' 49/' &+*=/' "(/] 4/ ' 1/' 2& +' 3/4 A A?@ ' ' ?' F@' =C J % 1F@?' = ' = F% F= ' A?@' & J ' @G ' GA E% 9+J ') ' 3 / / '' A?' F@' ?@] ' E= % C ?' A?' F@' F >F' CA=E% @=E ?>' 1CA J ' A @ T *+ :' 79 19' 7+=' @C' A' C A % @?' J @>' ?' @?> F% G F ?' A?@' FA C;' =?E' F= ' 42' 3/' : /1 : /:') A ?>' =?E' * ? E E' >A' GA' F ?EC@E' > ?@= ' @= F' ?' F@' I @ % 49/' ' /V4 :+# =?E' 6 =?E= ' E E' >A' F@' A F@C' F ?EC@E' > ?@= ' ;' =?E' F= % ?E@C' A A C' =?E' DC@ @? @' A1' F' I @ % F@ ' A I = ?@E' 1CA J ' FA J = % = ' =' D=C ' A1' F' DC@ @?E@E' I @ % G@? ' > ?@= ' A1' F@' 1 B@' F ?EC@E' > ?@= ;' I ' GF F' = E' 1= @' DC@ @? @ ' F@' E@1@?E=? ' ? =G1 % , % A I = ?@E' 1CA J ' F@' = E' FA J = ' F@' = E' G@? ' > ?@= % G F' ? @? ' A' F@= ' =?E' E@1C= E' F J ' F@C@A1;' GF@C@= % ?' C F% ?A' F' I @ ' F=E' I @@?' J =E@% , % =>= ? ' F@' 1AC J ' A1' F@' = @% , ' ' @ A?E' A ? ' = @E' F@' I @ ' A' F=B@' I @@?' J =E@' I @ G @@?') A ?>' =?E' J @C ' F@' E@1@?E=? ' F=B ?>' I @@?' A?B @E% ' G= ' AIZ@ @E' DA?' @CCAC' F= ' F@' DDA @E' 1= @' DC@ @? @ ' F@G ?' ?' F@' 1 C ' =?E' @ A?E' A ? ' G@C@' ?@ F@C' A? C=C ' A' F@' ' @? ' 9% ' % N?AG' C@D@= @E%d' AC' F@' ' @A ' -% ' - :% N?AG' C@D@= @E%d' AC' =? ' A F@C' = @ ' ?E' 1' G= ' =C> @E' F= ' F@' C=? = A?' @ 1' G= ' ?A ' F@' IZ@ ' J = @C' A1' =' C J ?= ' DCA @ A?% 1AC' F= ' ' E E' ?A ' =11@ ' F@' D I ' ;' =?E' F= ' ' G= ' A?@' =>= ? ' GF F' A J J A?' DC E@? @' J >F ' F=B@' > =CE@E' ;' 1AC% = ' ' G= ' F@' C@DC@ @? = A?' A1' =*> >" ' C=? = A?% F@' D=C ' F=E' =?' ADDAC ? ' A1' ?b C ?>' ? A' F@' C F' A1' % =?E' F= ' F@C@1A H@' ' G= ' F ' AG?' 1= ' 1' F@' G@C@' E@ @ B@E$ I ' F@' A IZ@ A?' G= ' AB@CC @E ' ACE' 6 @? A?% ' % = E% 7 ?EA I @E ' F ' ?E J @? % I @ ?>' 1A ?E@E' YA?' F@' ' @A ' -% ' - :% ' E 11@C@?' ' 1CA J ' =' A J J A?' =G" ?E J @? ' & F@?' ' D= @E' ' G= ' A? E@C@E' A' @] @?E' A' @B@C ' = @' G F@C@' =

R B' /) ' ,' ! (// ' 9+*) 9' /+(=' ' ' 1 /4# 7+=' ' 24' / ' (2**/ : GY' 9' 2<(4+*=2' 7/ (' 1*/+(' 49+4' 49/ (/' R B' ' 3' ! */=' .M' 2V' ' ' I I 7+=' ' 249 ') ' ' +'' 236/14 2'' 49+4' 49/' =2

D=C 'F=E' AI = ?@E' JA?@ ' I '1= @ 'C@D !@ @? ?>'F J @ 1' A'I@' ?' =' = A?' ?'GF F' F@'G= ' ?A %' AC' =? ' A CC@? @' F= 'F=E' ?A ' F=DD@?@E%' A'GF F'D@C A? 'A1'ACE ?=C ' , A?' J >F ' > B@! C@E ' F@' ' @? ' 9%' ' %'C@b C@ '='1= @' @= %'AC' A<@?%' A' I@' @E' ?' ACE@C' A' IC ?>' F@' D@C A?' JDA @E' DA?' ? A' F@' A?1 E@? @'A1' F@' A F@C;' I ' F= ' I@ ?>' 1A ?E' A' I@' ? 11 @? %' F@' ' @A ' -%' ' -:%' ? CAE @E'=?A F@C' A11@? @%' E@ C I ?>' ' ?' @CJ '@] C@J@ ' >@?@C= ' ' @@J ' E 11 ' A'EC=G' F@' ?@%' =?E' A' = ' A'GF=' = @ ' F ' = @' F= '@] @?E;' =?E' F@C@1AC@' G@' J ' @@' GF@ F@C' @= F'D=C =C' = @%' = ' ' =C @ %' AJ@ 'G F ?' ℍ ' ACE F D' F@?'=EB@C @E' A4 F@'1= ' A1' F@' = @' I@1AC@' F@' A C ;' =?E'=1 @C' = ?>' F= ' F@' E@1@?E=? %' JAC= ' D@=< ?>%%'F=E' I@@?' > ' A1' =?' A11@? @%' DCA @@E@E' F '$ 7 '=EJ ' F= ' F@C@' =C@' @C = ?' CC@T > =C @ 'GF F'=C@' ?A ' F@' IZ@ 'A1' C J ?=' =G' 'GF@?' F@' C J ?=' =G'F=DD@? ' A' ?@' =] =C ' A' F@' =G'A1' JAC= % ' EA' ?A ' 1@@ ' =? ' ? ?= A?'% A' @]D = ?' '=G= ' "AG' F ' A1 1@? @' 'G F ?' F@'GACE 'A1' F@' ;' 1AC' F@'E@1@?E=? 'F=B@%' I ' 1= @'DC@ @? @ %' 1C= E @? ' A? C B@E' A' AI = ?' JA?@ '1CAJ' F@' DCA @ AC;' =?E' ' @@'?A'C@= A?'GF ' ' FA E' ?A ''I@' F@ E' A' I@' G F ?' F@' J @=? ?>'A1' F@' = @ ℍ F C %' %' = E%' ?' > B ?>' F ' AD ? A?% 7 F@' ' Y 4 ' ' -:%' C@= @E' =?' 4** ' GF F' E E' ?A ' @] ' I@1AC@%' =?E' ' F ?<' ' ? E@ ' F@' DC@ @? ' F@' @> = C@' =G' F= ' = ' J@?' G@C@' ?A ' @b = ' DC Eb? %' =?E' F ' = @'G= 'D= @E' A'DCA @ ' F@'G@=<@C'D=C 'A1' J =?< ?E%' N d' F@'GACE 'A1' '=C@' B@C '>@?@C=%' [' ' D@C A? 'GFA' <?AG ?> ' I ' 1= @' DC@ @? @ ' F= ' AI = ?' 1CAJ' =? ' D@C A?' JA?@ %' >AAE %' , %' G F' ? @? ' A' F@=' AC' E@1C= E%' , %n' =?E' G@' F=B@'?A' DAG@C' A' C@ C= ?' F@ C' AD@C= A? ℍ ?E' @C%' %' =1 @C' !AI @CB ?>' DA?' F@' ' @? ' =CE%' 7 F@' @> = C@' FA >F ' F= ' F@'1A J@C' = @'G=' AA' J @E';' =?E' F@C@1AC@' F@' ' @A ' -%' ' -:%' &=' D= @E;'GF F'@?= %' [' F= ' = ' D@C A? 'GFA' F= ' AI = ?' JA?@ ' 1CAJ'A F@C %' I '*6 'E" 'G F' ? @? ' A' F@='AC'E@1C= E' F' D@C A? %' F= '< '# & #'4** # " '626! ' < 'E>: ! 'E 6 j℗ F@' = @%' F@C@1AC@%' @=C ' @] @? ' A' = > ' GF F' G@C@' ?A ' F@' IZ@ 'A1' =?' ?E J@?' = ' AJ JA?' =G ! F@' ?>C@E @? 'A1' F ' A11@? @' =C@%' F@' AI = ? ?>' JA?@ ' I '1= @' DC@ @? @ %' =?E' GE F' =?' ? @? ' A' E@1C= E ' =C@ '= < ?>' =?A F@C' 1AC' =' J'A1' JA?@ ' ' ?A ' 11 @? ;' I ' AJ@' DC@ @? @' J 'I@' @E%' =?E' F= 'DC@ @? @' 1= @';' =?E' F@' ? @? ' '?@ @ =C ' A' A? @' F@' C J@' 1' F@' ? @? ' I@' J =E@' A %' =?E' F@' 1= @' DC@ @? @' @E' ?' ACE@C' A' @11@ ' 4' 'IC ?> ' F@' = @'G F ?' F ' = @ ℍ NW d

' &+*=/' =4+4/P ; / '4 49+4 +' =21 /4# 9+:' DMMM ' '' +' 3+'0' ;+:/' 42' ' :<1/' +' "/(P =2'' 42' 3/12 '+' +' ; / ; 3/(2& 49/' =21 /4#' =' 7 49 '' 49/' 14]

DA?' =?' ?E J@?' 1AC' AI = ? ?>' JA?@ ' I '1= @' DC@ @? @ %' ' =DD@=C@E' F= ' F@' DC A?@C' F=E' C@DC@ @? @E' F= ' F@' I@ A?>@E' A' =' I' =?E' G= ' =?B= ?>'1AC' J @J I@C ';' 'G= ' = @E' F@' 7 ? =? ' @?@1 %ℍ F@' = E' ' G= ' =' B@C ' CA?>' I';' F@ ' F=E' =IA ' . ' ?' F@' I=?< ' F@'DC A?@C' G= ' F@' D@C ? @?E ?>' E C@ AC' A1' F@' A @ %' I ' ?A' J' A1' . '%' AC' ?E@@E' =? ' J' A1' JA?@ ' GF= @B@C%' I@ A?> ?>' A' F@' A @ %' F=E' @B@C' I@@?' ?' =? ' I=?< ' ?E%' DA?' =' = @' C@ @ G@E%' ' G= ' F@ E' F= ' F ' G= ' =' 11 @?' DC@ @? @' G F ?' F@' = @;' 7 A' DDAC' =?' ?E J@?' 1AC' 1= @' DC@ @? @ ' F@C@' J ' I@' =' <?AG ?> '1= @' = @ J @? ' A1' =' DDA @E

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I @E% 'G= ' C>@E' F= %' = ' F@' @= @' G= ' >AAE' 1AC' FC@@'
@=C %' F@' = @>= A?' ?@>= B ?>' F@' DC@ @? @ ' G= ' I=E' ?' D=C %'
=?E' F@C@1AC@' I=E' = A>@ F@C;' I ' F@' AIZ@ A?' G= ' AB@CT
C @E ' 1 3

'&+*=/' (/"(/P DA?' =?' ?E J@?' 1AC!1= @ 'DC@ @?E ?>' F= ' F@C@' G= 'A?@
=/'4+4 2' 2& +' ' J F%' =?' CA? J A?>@C' = ' "@G = @%' =?E' F= ' F@' = E' ' J F'
]2'+/14 2'' G= ' =' D@C A?' A' GFAJ' F@' DC A?@C' E C ' C ' A?@' FA =?E'
49'+' ;+'' 2& DA ?E %' =?E' F= ' J F' G@?' A ' G @' =' @=C' A' "@G' C @=?' A'
2"<*/'1/ =<@' E 11@C@?' < ?E ' A1' >AAE ' A' F ' A? %' =?E' F= ' F@' DC A?@C'
G=? @E' AJ@' A A?' G=CD' A FL' 1AC' F@' = E' ' J F;' F@'
@B E@? @' DCAB@E F= ' F@' DC@ @? @ ' G@C@' J =E@' = ' = @>@E%' =?E' F@'
Z C ' 1A ?E' F= ' F@' DCA @ AC ' I@ @B@E' F@' C@DC@ @? = A? %' =?E'
?' A? @b @? @' A1' F' I@ @1%' F ?< ?>' F= ' F@' DC A?@C' G= ' ='
D@C A?' G F' GFAJ' F@ ' J ' ' =1@ ' A? C= %' = ' I@ ?>' A??@ @E'
G F' ' J F%' =?E' @ J D A '' I ' F J' A' AI = ?' >AAE %' E E' J@=?'
A' A? C= ' G F' F@' DC A?@C%' =?E' ?A ' G F' ' J F%' =?E' E E%' ?'
D C =? @' A1' F' A? C= %' E@ B@C' F@' >AAE ' A' F@' DC A?@C' 1AC'
F@' D A?@C' F J @ 1' =?E' ?A ' 1AC' D ' J F';' =?E' 'G= ' A? @?E@E%'
F= ' F ' I@ ?>' A%' F@' DC A?@C' G= ' @? @E' A' I@' = b @E;' I %'
DA?' =' = @' C@ @CB@E' =1 @C' =' B@CE ' A1' > %' F@' A?B A?' G= '
F@ E' C >F ' F@C@' G= '=' 1= @' C@DC@ @? = A?' F= ' F@' DC A?@C' G= '
A??@ @E' G F' =' D@C A?' A1' AD @? @%' =?E' F= ' G= ' 11 @?' A'
= ?' F@' A?B A?%' 'I@ ?>'=' J C@DC@ @? = A?' A1' =?' @] ?>'
1= %' DA?' F@' 1= F' A1' GF F' F@' DCAD@C 'G= ' AI = ?@E%' NAd

2'/#23' ?' F@' = @' A1' - ?' B' I4> 2' J@? A?@E%' 6 ' D' 8-9%'
4+ ' /' 3# 49/' @C%' %' @E' F@' 1A AG ?>%' = ' =' = @' ?' DA ? ;' F@' E@1@?E=? %'
&+*=/' "(/4/'1/' A ?' 3 @?@ B@%' =DD @E' A' C' ' CA >F A?%' @ ?>' F J' F= ' F@'
2& 3/ ')' 'P G= ' ? C @E' I ' F@' # <@' E@' = K ?' A' =<@' A J@' FAC @ ' 1CA J'
4(<=4/ :' 3# +' C@ =?E' A' A?EA?%' =?E' F= ' F@' F=E' I@@?' E@ = ?@E' A' A?>' I ' A?T
&2(/) '' '23*/P C=C ' G ?E ' F= ' F ' J A?@ ' G= ' D@? ;' I ' GF F' C@DC@ @? = A?'
; +'' 42' 4+O/' C' ' CA >F A?' G= ' ?E @E' A' =EB=? @' A J@' J A?@ ' A' F J $
92(=/=' &(2 ;' (/*+' ' :' 42' =1 @C' GF F' ' C?@E' A ' F= ' F@' DC A?@C' ?@B@C' F=E' I@@?' @ JT
2' :2' ' +' :' D A @E' I ' F@' # <@' E@' = K ?%' =?E' F= ' F ' GFA @' AC ' G= ' ='
49+4' 9 =' ' 2"/# 1 A?' AC' F 'A11@? @' F@' G= R A?B @E%' =?E' @? @? @E' A' F=CE'
7+=' ="/' 4 =IA C' A?' F@' F=J @ %' NDd

?' ?E J@?' F=C>@E' F= ' F@' DC A?@C' 1= @ 'DC@ @?E@E' F= '
F@' F=E' >A ' =' =CC =>@' =?E' D= C%' =?E' @] D@ @E' 'EAG?' A' ' F= '
E= 'AC' F@' ?@] %' =?E' F= 'F@' F=E' =' =C>@' DCAD@C ' =ICA=E' F@'
@B E@? @' &= ' F= ' F@' DC A?@C' G= ' = ' %' = J ?>' A' I@' ='
J =?' A1' DA A?' =?E' G@= F%' I 'G= ' ?' =' E@ @' A?E A?%' =?E'
A E' ?A ' D= ' I 'FA @ '=?E' A F@C' I ' F= ' FC@@' E= '=1 @C' F@'
=J@' A' '=?E' ?E @E' DCA @ AC' A' D=C 'G F' >AAE ' A?' F@' C@ '
D @ @? = A?' F= 'F@' F=E' Z %' AJ@' 1CA J' = ICA=E%' =?E' F=E' F DD@E'
=' =C>@' b =? ' A1' G ?@' A' (' 1CA J' ?> =?E%' =?E' @] D@ @E' F '
=C =>@' =?E' D= C' A' AJ@' EAG?%' =?E' F= ' F@' F=E' =<@?' =' =C>@'
FA @' = ' '=?E' G= ' >A ?>' A' 1 C? F' ' @ E%' F= ' F@' 1= @' DC@T
@? @ ' F=C>@E' G@C@' 11 @?' ?' DA ?' A1' =G%' =?E' = A' F= ' F@'
@B E@? @' G= ' 11 @?' A' = ?' =' A?B A?%' 1 3

9/(/' +' & F@C@' =?' ?E J@?' = @>@E' F= ' F@' DC A?@C%' I@ ?>' =' AJ JA?
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" B' /)' X' !(443#' .' 2V' ' 'G.N' " B' **/'/<J/' 1+=/' ' 2(/42'' '
<**210' 2 ; (' 792' 2'=<*4/ :' =2 ; /' 2& ' 2& 9/=4/(' +' :' <**/(' ' 9/=4/(' '
49/'6<:)/= .DDE' H' ' .MI' .MA' '&' **244'
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=CC @C F=E @ @ B@E >AAE A =CC =?E E@ B@C = =
D = @ =?E F= =1 @CG=CE ? @?E ?> A F@= F@ A? >?AC A1
F JA?@ F@ DC@ @?E@E A F J F= F@F=E =CC @E=?E E@ B@C@E
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N F@ = E =CC @Cd =C@ @ D @]DC@ ?> F@ E@ B@C A1 F@>AAE ;
I F= F@ F=E A AC J = E F@ C@ @ D ;=?E F@?E@J=?E@E
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F 1= @ DC@ @? @ NGF F G@C@E ?@>= B@Ed AI = ?@E F@
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F@ = @ NCd A GF@C@F@E1@?E=? ? F@ = J@E F=C= @C
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G F =DC ? @E <@ G F GC ?> F=C> ?> =CC =>@ =?E DACT
@C=>@ =?E C@ @ B@E F@ JA?@ F '@E; =?E F@ D=C @ C?@E
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DC@ @? @ F=C>@E ?F@ ?E J@? G= =<@?1CAJ F@ DAC @CH
<@ ; =?E G= AIZ@ @E F= F@ E@1@?E=? F=E ?A @C@E
F@ @GACE ; ACE @?IACA >F = E T =<@ F@E@1@?E=?
A F=B@ @C@E @B@C GACE A? = ?@E ?F@ <@ GF F F@
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& F@C@ F@DC A?@C G@? A =C=E@ J=?H FA @ =?E = E F@
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1 F@GA E @ F@C F=3@F= 1 = > ?@=H GAC F A1 B@C =?E F=
F@ GA E @?E F@ F= 1 > ?@= DC@ @? ; DA?GF F F@ AIT
= ?@E F@ B@C G@? =G= G F =?E?@B@C C@ C?@E; F@ = @
G= FA E@?A A =JA ? A1 1@A? 1 3 ?E = E F= ?
C F F G= =A=?A1 F@ B@C DA?F@1= F F= F@=JA ?
GA E I@ C@D= E = =?A F@C J @; G= JA?@ AI = ?@E I =
*6 E" G =?E F= F@ =J@E@ @CJ ?= A?F=E I@@?J=E@
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A F@DCA @ AC =?E F@DC@ @? @ J=E@ @A1G= = @E A I@
1 A $ 5=C<@ A E F@ >C=?E Z C GFA = <@E F AD ? A?
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F=J =?E =DD@=C@E F= F@G@? A F@ FAD A1 A?@ A? =?E
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"B /V + J 5. G +=4 HM
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34+ ' ')
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4/ ' : ')42 3/
= / '4 3# +
1<=42 ; /(&2(
49/ ;

4/ ' : / : 42 2&
12 =) '2(2&
)22: 49+4 9/
9+ : ' : /* J/(/ :
49/ ; 42 49/
12 =) ' // ' + ' :
49/(/3# 3
4+ ' / : ' ; 2 '/#
&2(49/ 1+(P
(+)/ 4 7+
92*: / '' 7 49 ''
49/ HM ! /2 G
1 G.

Z C ' A?B @E I DA?' =' = @' C@ @CB@E' DA?' F@' b @ A?' YGF@ F@C' F@' A11@? @' G= ' =C @? F@' Z E>@ ' G@C@' = ' A1' AD ? A?' F= ' F@' A?B A?' G= ' GCA?>1 53

' "(/4/ '1/ 49+4 1+(" /4 K7+ 7+ '4/ :' &2(' +' &+ ; *# * J ')' ' +' *+()/ 92<=/ ' 792 9+ :' 9+ :' +' :+<)94/(' *+4/*# ; +(P (/ :

?' ?E J @? ' = @>@E' F= ' F@' DC A?@C' DC@ @?E@E' F= '=' D@C A?
GFA' B@E' ?' =' =C>@' FA @' EAG?' F@' C@@ =?E' F=E' F=E' =' E= >F @C' J =CC @E' A J @' J @' I= <1 F=E' I@@?' = ' F J F@' DC A?@C
=I A ' A J @' =CD@ =?E' F=E' = <@E' F J ' A' DCA C@' =' D @ @' A1'
GAA @?' =CD@ ' F@' DC A?@C' G@? ' A' F@' DCA @ ACH' FAD' ?' =
B =>@ =?E' = E' F= ' F@' G=? @E' A J @' =CD@ ?>' 1AC' =' 1=J '
B ?>' ?' =' =C>@' FA @' ?' F= ' B >@ GFA' F=E' F=E' =' E= >F @C'
= @ ' J =CC @E ' 4 ?' F ' F@' DCA @ AC' >=B@' F@' DC A?@C' =I A '
G@? ' =CE ' A1' =CD@ ?>1 GF F' F@' DC A?@C' A E' 1AC' F ' AG?'
I@?@1 ' F@' A? ' @B E@? @' A' ?@>= B@' F@' 1= @' DC@ @? @' F=C>@E'
B=' F= ' A1' =' =E ' B ?> ' ?' F@' B =>@ GFA @' E= >F @C' G= '
J =CC @E' =I A ' =' @=C' =>A' G?A' = @E' F= ' F@' F=E' ?A ' @? ' F@'
DC A?@C' 1AC' F@' =CD@ ' ' G= C>@E' F= ' F@' ?E J @? ' E E'
?A ' 11 @? ' = @' =? ' 1= @' DC@ @? @ =?E' F= ' A?' F@' @B E@? @'
F@ @' G= ' ?A F ?>' A' >A' A' F@' Z C =?E' F= ' F@' DC@ @? @' = @>@E'
I=E' ?A ' I@@?' 11 @? ' ?@>= B@E ; I ' F@' @ A? ' F@ E' F= '
F@C@' G= ' =' 11 @? ' DC@ @? @' = @E =?E' F= ' F@C@' G= ' @B E@? @'
A' >A' A' F@' Z C ' ?' DDAC ' A1' ; =?E A?' =' = @' C@ @CB@E F@'
A?B A?' G= ' =11 CJ @E N=$d

L+*=/' (/"(/P =/ '4+4 2 " +=' 42' 49/' 4 ; /' 4' 2& "+# ; / ' 4' 2&+' 3 *# 2& /V(

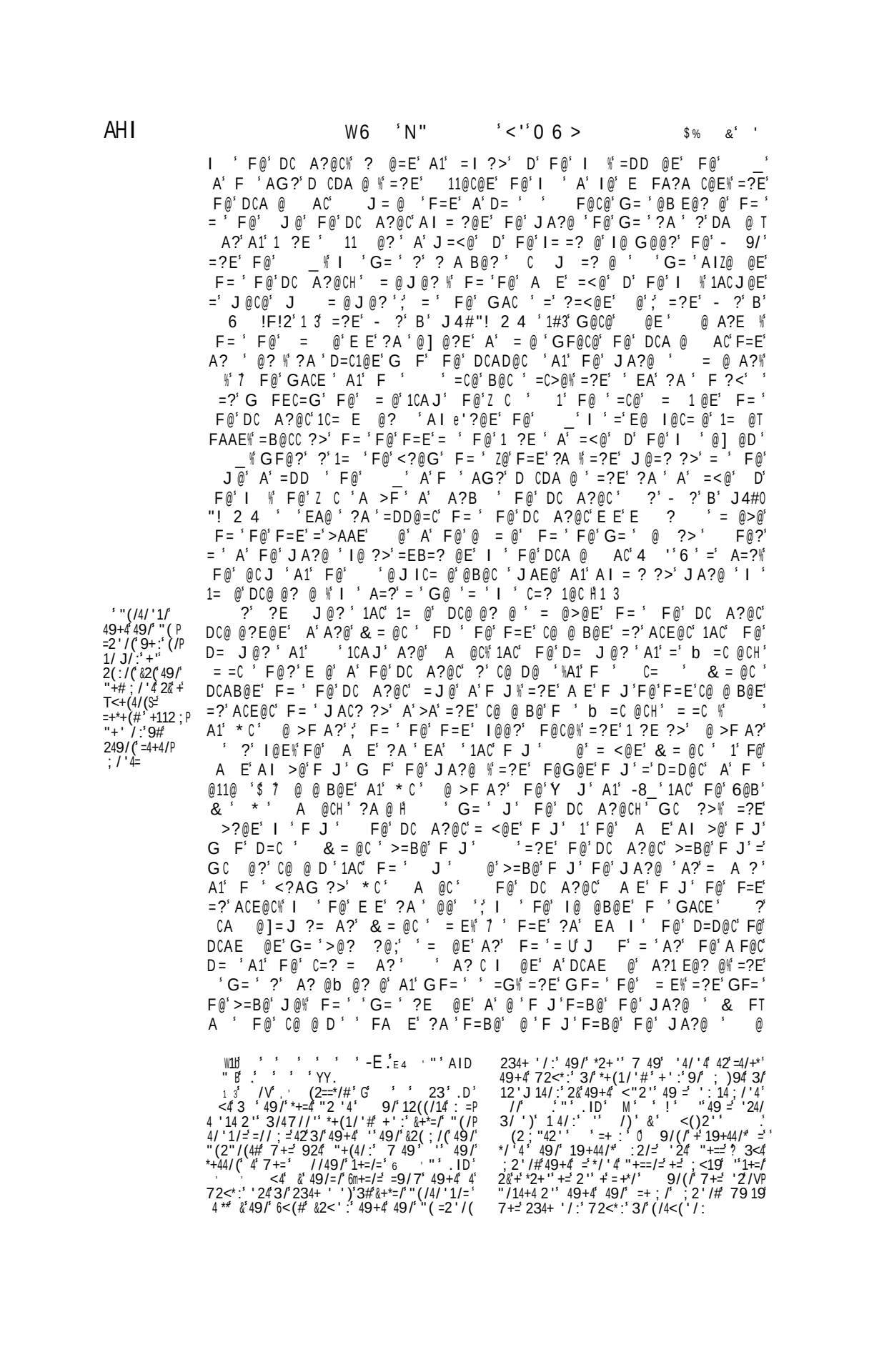
& F@C@' F@' DC A?@C' D C F= @E' >AAE ' =?E' >=B@' ?' D= J @? ' 1AC'
F@ J ' =' I ' EC=G?' A?' =?E' = @D @E' I ' F J @ 1' A?' F@' E= ' A1' F@'
D C F= @ D= =I @' A?@' J A? F' =1 @C' E= 1@ = ' F@' A?EA?' =?E'
& @ J ? @C' =?<1 =?E' GF@?' F@' >=B@ PF @' I ' F@' = @E' F= ' '
GA E' I@' D= E' F@' ?@] ' E= ' = ' =' I =?<' ?' = ? A?1 =?E' F= ' F@'
F=E' J =E@' =CC=?>@ J @? ' F= ' ' FA E' ;4 I ' F@' J =?=>@C' DCAB@E'
F= ' F@' DC A?@C' F=E' FA ' J =E@' =CC=?>@ J @? ' 1AC' F@' D= J @? ' A1'
F@' I =?E' F=E' ?A ' I @@?' = ' F@' I =?< =?E' & =' ?A ' <?AG?' F@C@ ;
& = A? =?E' = E 7 1' F@' C@DC@ @? = A?' J =E@' I ' F@' D ! A?@C'
G= ' 1= @' =?E' F@' DCA @ C]' D=C @E' G F' F@C' >AAE ' A?' F@' 1= F'
A1' ' I @ ?>' C @ F@' DC A?@C' ' > ' A1' A I = ? ?>' J A?@ ' I '
1= @' DC@ @? @V H NZWd 4 '

F@' DC A?@C' A I = ?@E' =' J' A1' J A?@ ' 1CA J' F@' DCA @ AC' I '
DC@ @?E ?>' F= ' F@' =CC @E' A?' =?' @] @? B@' I ?@ ' = ' =?' = T
A?@@C' =?E' FA @' =>@? =?E' F= ' F@' G=? @E' =' @C<1 =?E' F= ' F@'
J A?@ ' G= ' A' I @' E@DA @E' = ' @ C ' 1AC' F@' DCA @ ACH' FA?@ '
= ' F' @C< ' F@' Z C ' 1A ?E' F= ' F@' DC A?@C' G= ' ?A ' =CC ?>'
2 ' F= ' I ?@ ' = ' = ' @ E F= ' F ' G= ' =?' ?E =I @' 1= @'
DC@ @? @ 183

34+ ' ')' +' *2+ '' 2& EM. ' 3# &+*=/*# " (/P 4/ ' : ')' 49+4 +' 92<=/ ; :' 3// '' 3< *4 ' +' " /1/ '2& *+ ' : ' 49/' */+=/' 2& 79 19

DA?' =?' ?E J @? ' 1AC' A I = ? ?>' =' F@b @' 1AC' + ' I ' 1= @'
DC@ @? @ ' =DD@=C@E' F= ' F@' DC A?@C' F=E' @ J D A @E' F@' DCA @T
AC' =' A AC' A' DC@D=C@' =' A? C= ' 1AC' I E ?>' =' FA @' =?E'
GAC< FAD' DA?' =?E' ?@=C' F@11 @ E' @' =1 @CG=CE ' = <@E' F J'
1AC' F@' @=?' A1' + ' @' A E' F J' F@' I E@C' F=E' 1 ? F@E' F@'
FA @' =?E' GAC< FAD' =?E' F= ' I@' G= ' FAC ' A1' J A?@ ' A' D= ' 1AC'
@] C= ' =?E' F= ' F@' FA E' F=B@' F@' @= @' ?' =' E= ' AC' GA

" B' /)' ' :+ ;=' .' /' ' ' HE' ' ' DE' 2 ; /' 2& 49/' 6<:)/=' 422O +'
9/(/&2(/' 49/' 2&&/ '1/' 7+=' 234+ ' ')')22 :=' : &&/(/ '4' J /7
3# &+*=/' " (/4/ '1/=' /' &' : :*/42' ' W+2 /)' &' <('= :/=' /**' ' 'GEG'
' "' .A. ' &(2 ;' 49/' 6<:) ; / '4') J/ '' /' ' L(+' O* ' ' I' L' ' L' DI
3# =2 ; /' 2& 49/' 6<:)/=' '' 49 =' 1+=/' 4' 1'3 /)' ' <)9/=' L' ' L' HYA
=// ; =' 49/# 492<)94 49+4 ' &' :+ ; =' "V ' ' (+3' .' 2V' ' ' EA
7+=' '24 12((/14*# : /1 : /: ' /' I^' ' '



1 C ' A E' J @' @' F=E' C@ @ B@E'=' @ @C' 1CA J' * C' A @C' F=' J AC?T
?>' F='G='D=C'A1'J ' ?E @J@?' A' @'F J'F=B@' F@' JA?@
@'F=E' F@'D=D@C' ?'F 'F=?E'=' F@' J@%'GF F'F@'F=E' =<@?' A'
* C' @ >F A?%'=?E' = E' F@' @ @C'G='G F ?>'F J' A' >A' A' * C
@ >F A?%'=?E' EC=G' F ' b =C @CH' = =C H ' G='AIZ@ @E' F='
F@C@'G='='B=C=? @'I@ G@@?' F@'DC@ @? @' = E'=?E' F='DCAB@E';
F=' F@'DCAA1'G=' F=' F@'DC A?@C' = E'F@'F=E'C@ @ B@E'=' @ @C'
=?E' ?A' =?' ACE@C';=?E' F=' F@'C@ @ D'EC=G?'1AC'*C% @ >F A?'
=?E' F@' C@ @ D'> B@?' A' & = @C ' F=E' I@@?'@ @? =' D= E'A1' F@'
?E @J@?' A'D=C'G F' F@' JA?@ %'=?E'G@C@'?A' = @E' ?' F@'
?E J@?'=' F@ 'A >F' A' F=B@'I@@?' F@' A C'AB@CC @E' F@'
AIZ@ A? %'=?E' @1' F@'1A AG ?>'DA ? ' A' F@'Z C '$` Ú #<' F@'
DC A?@C' J=<@' @' A1' F@' DC@ @? @'= @>@E' ?' F@' ?E J@?'V
-' E' & = @C ' D=C'G F'F ' JA?@ 'a1?' A? @b @? @' A1' F='DC@T
@? @' ' & = ' '1= @'V : ' E' F@'DC A?@C'AI = ?' F@'JA?@
G F' ? @?' A'E@1C= E'V F@'Z ' '1A ?E' F@'DC A?@C%'> %'=?E%'
DA?'=' = @' C@ @CB@E'AD' F@' b @ A?'GF@ F@C' F@' C ?>'A1' F@'
A C%'=?E' F@'E C@ A?' A' F@'Z C ' ?' A?1AC ? ' F@C@G F%'G@C@'
C >F %' @CB %' ' %'=1 @C' =C> J@?'1AC' F@' DC A?@C%' E@ B@C@E'
Z E>J@? ' 7 & @' =C@' = <@E'GF@ F@C' F@'C ?>'A1' F@' A C'=?E'
F@'E C@ A?' A' Fp'Z C 'G@C@' C >F %'=?E' A C'=? G@C' ' F=' F@ '
G@C@'C >F ' @ = @' ' =J@' A ' A?' CA @] J ?= A?' F=' F@'
DC A?@C' = E' F=' F@' I=E'C@ @ B@E'=' @ @C%' F@C@1AC@' ' @@J ' A'
I@' A? @?E@E' F=' F@'E E'?A' = ' F=' F@' F=E'C@ @ B@E'=?' ACE@C%'
=?E' F=' F@C@' '='B= =? @' I@ G@@?' F@'DC@ @? @' = E'=?E' F@'
DC@ @? @'DCAB@E' 'EA'?A' F ?<' F=' F@C@' '=? 'B=C=? @' F@'
AIZ@ A?'G= %' F=' 'G' '?A'DCAB@E' F=' F@'DC A?@C'DC@ @?E@E'
F=' I@'F=E' C@ @ B@E'=?'ACE@C' 1AC' JA?@ ' F@?' E @' =?E'D= =I @';
I 'GF=' =?'F@' F@' J@=? ?>'A1' = ?>' F=' F@'F=E' C@ @ B@E'=?'
ACE@C' 1AC'='b =C @CH' = =C %'I ' F=' ' G='E @' =?E'D= =I @'V
?A F@C'AIZ@ A?' %' F='D=C'A1'F@' ?E @J@?' A' F@'DCA @ AC'
A'D=C'G F'F ' JA?@ 'G=' F@'C@ @ D %'=?E' F=' F=' ?E @J@?'
'?A'=B@CC@E' ?' F@' ?E J@?';' I ' F@'= ='I =? ='DC@T
@? @'G=' F='F@'F=E'C@ @ B@E' F@'ACE@C';F@' ACE@C'=?E'?A' F@'
C@ @ D'G='F@' J=?' ?E @J@?' DA?' GF F' F@' JA?@ 'G!='
D=C @E'G F' F@'DC@ @? @'G=' ACC@ '1A ?E'I ' F@'Z C ' F@'
C ?>'E C@ A?'=?E'B@CE '=C@'C >F HNWd

' A ?'= @>@E' F=' F@'DC A?@C'1= @ ' DC@ @?E@E' A'#' G@?' '"(/4/'1/'
F='F@'F=E'=' @ @C'A1'C@ AJ J@?E= A?'1CAJ' F@' @B' * C' 'A1'6 %'
=?E' F='F@'F=E'@?>=>@E' A' J=<@'1AC' * C '5'=?E' F@C' ? @ @' ? ?@' F@'DC A?@C' A'
?@G' @@ F'1AC' F@' J' A1' @B@?' DA ?E %'=?E' F=' * C '5' F=E' ;+0/'4//49'
C@1 @E' A'=EB=? @' =? 'JA?@ ' A' F J' ? ' F@' @@ F'G@C@' AJT 3<4'72<*:''2/'
D @ @E%'=?E' F=' F@'G=? @E' F C ' F ?>' A' AJD @ @' F@' @@ F +:J+'1/'+'#
F@'DC A?@C'F=E' = @E' A' * C' G@?' F=' F@' G=' =' E@? ' ?' ;2'/# &2(' 49/ ;
@=C F'A1'@JD A J@? %'=?E'F=E'DCAE @E'=' @ @C'A1'C@ AJ J@?E=T
A?' D CDAC ?>' A' I@'GC @?' I ' * C' %'=?E' * C % G@?' >=B@'
F J'=' @ @C' A' * C ' 5 %'=?E' =1 @CG=CE ' F@' DC A?@C' = @E' A?'
* C' G@?%'=?E' = E' F=' * C '5'F=E' > B@?' F J'='ZAI' A1' @B@?'
DA ?E %'I ' F@' A E' ?A'= AJD F' 'G FA ' AJ@' JA?@ ' '
I '>A E%'=?E' * C '5'GA E' ?A' =EB=? @'=! ?> @'1= F ?>' ? '
F@'ZAI' G='EA?@%'=?E'F@' F@C@1AC@'= <@E' * C' G@?' A' @DE' F J'
F C ' F ?> ' * C' G@?%' ?A' F=B ?>' F=?>@%'=EB=? @E' F J

DA ?E ' * C '5 ?' A? @b @? @' A1' * C' G@?H' @ @C F=E'
=>C@@E' G F' F@' DC A?@C' A' J =<@' ? ?@' @@ F]' 1AC' F@C @ 1' =?E'
FC@@' 1AC' F@C' ? @ @ =' 1 B@' F ?> '@= F' ; F@' = <@E' 1AC' JA?@ 'A?
= A ? =?E' * C '5 '>=B@' F J' F C ' F ?> ' @' ?@B@C' J=E@'
F@' @@ F ' A @C E>@ A E' F@' Z C ' F=' 1' F@ 'I@ @B@E' F@'
G ?@ @ ' G=' @=C '@ =I F@E' F=' F@' DC A?@C' F=E' J=E@'
=' 1= @' = @C A?' = ' A' ?A ' F=B ?>' C@ @ B@E' =? ' JA?@ '1CAJ'
* C '5 N'Cd

(/4/' : ')'
49+4' +' +'O
2& */)+']/'
'24/' 7+=' +'
& +'O' 2& ')P
*+' :' '24/

F@' DC A?@C' G=' ?E @E' 1AC' 1= @ 'DC@ @?E ?>' F=' =' D @ @' A1'
D=D@C' A1' ?A' B= @ GF F' F@' DCAE @E' A' F@' DCA @ C] G=' =
=?<' A1' ?> =?E' ?A @' 1AC' '=?E' A1' F@' = ='B= @' A1' ' F@'
?A @' G=' =' =?<' A1' @>=? @' ?A @' @?E@C@E' 'C' ' F< 'DC A?@C'
A E' F@' DCA @ C]' ' G=' =' =?<' A1' ?> =?E' ?A @' F@' DCA @T
C]' I=E' I=E' @ @ >F =J E' >@?@C= ' @E' D@ = @ I 'F=E'
F@ J '?A 'G F' F@C' GF@?' F@' F=?>@E' F@' ?A @' F@' DC A?@C' G='
A?B @E 1 3' '

&4+' : <*/' 4*#
"(/4/' : ')'
49+4' +' :+=9'
'24/' =' +' +'O
2& ')*+' :'
'24/' =' +' +*=/'
"(/4/ '1/'
7 49 ''49/'
=4+4<4/

F@' ?E J @? '= @>@E' F=' F@' DC A?@C' ? =G1 'E E' 1= @ '
DC@ @?E' F=' =' @C = ?' DC ? @E' D=D@C' F@?' DCAE @E' G=' =' >AAE'
=?E' B= E' DCA J AC '?A @' 1AC' F@' D= J @? ' A1' 1 B@' DA ?E ' F@'
DC A?@C' A11@C@E' A' F@' DCA @ AC' <"' D= J @? ' A1' FC@@' DA ?E '
@B@? @@?' F ?> ' =?E' ' D@? @ 1AC' @C = ?' D > ' =>C@@E' A' I@' A E'
F J' A' F@' DC A?@C' =' DC ? @E' D=D@C' AJ JA? ' = @E' =' 1 = F'
?A @' A? = ? ?>' F@' GACE '=?E' 1 > C@ '1A AG ?>' =CC=?>@E' A' = ' A'
F=B@' F@' =DD@=C=? @' A1' =' =?<' A1' ?> =?E' ?A @' $ `

!' 8 ' =?<' A1' @>=? @ ' "A ' -
' 'DCA J @' A' D= 'A?' E@ J =?E' F@' J 'A1' 1 B@' DA ?E ' 1' ' EA'
?A ' @ '=C @ ' F@=D@C' F=?' =? 'IAE '@ @' ?' F@' GFA @' ? B@C @
' =? =C ' ' 98 ' ' AC' * @ 1' =?E' A
7 B@ ' 7 * ' 2 /.!
' 8 ' A?' C@@ ' CJ ?>F= J H

F@' DCA @ AC' = E' A' F@' DC A?@C' ' ' F ?<' ' ' ?A ' =' >AAE'
A?@ H F@' DC A?@C' = E' 7 ' ' =4 1 @' DA ?E' =?<' A1' ?> =?E'
?A @' =?E' G ' 24' =? GF@C@ H 5CA @ AC' F@?' AA<' F@' ?A @' =?E'
>=B@' F@' DC A?@C' F@' F=?>@' ' - ' E ' =?E' E@ B@C@E' D' F@'
D > ' F@' DCA @ AC' = E' F@' A E' A? ' C@=E' B@C ' I=E ' =?E' '
I@ ?>' C@b @ @E' ?' A C ' A' C@=E' F@' ?A @' = E' F@' A E' ?A ' C@=E' '
= ' = ' F@' DC A?@C' G=' A?B @E' =?E' DA?' =' = @' C@ @CB@E'
DA?' F@' b @ A?' GF@ F@C' F@' = ' A1' D ?>' A11' F@' DC ? @E'
D=D@C' ?' b @ A?' = ' ='1 B@' DA ?E' =?<' A1' ?> =?E' a?A @' ?' D=

W)(6 /)' ' 2'/=' Y' 2V' ' ')(G'
'249/(' 12<'4' +**/)/ :' 49+4' 49/' "(=2'/(' 9/' : /' 47/*J/' ; */=' 2&&' 2*/(:)/' '
"(/4/' : /:' 42' ' ' 49+4' 9/' 7+=' +' : /'4 =4' 42*:' 49/'6<(#' 49+4' &' 49/' +)(// ; /'4' 9+:'
+' :' 49+4' 9/' 7+=' 7 ** ')' 42' ; +0/' +')2*:' 3//'' +' J' '+)(// ; /'4' +*492<)9' '24'
"+*+4/' &2(' ' &2(' C.' &' 9/' 49/"(Z "/(&2(; /:' 49/' "(=2'/(' 12<*:' '24' 3/' 'P
=2'/(' 3/&2(/' ; +0 ')' 49/'=+ :')2*:' "+*+4/' : 14/:' &2(' 49/' 3(/+19' 2& 4' <4' 49/=<" '
=92<*:' (/1/ J/' &(2 ; ' ' ' 49 (4// '' "2=4 2'' "<4' &2(' 7+(:' 2'' 49/' "+(4' 2& 49/'
=9 ** ')=' '' 1+=9' :27 ' '+' :' +'&+*=/' "+*+4/' "(2=/1<4 2'' 7+=' 49+4' 49/' "(=2'/(' '/J/('
2& ' 42' 3/' +**27/:' &2(' +4' 49/' =< ; ' 2& '4/' : /:' 42' ; +0/' 49/' ' /7' "+*+4/' +4' +**'
=/J/ '' =9 ** ')=' 9/' "(=2'/(' 9+:' +)(//:' 9+4' 7+=' +' T</=4 2'' &2(' 49/' 6<(#' 42' :/P
42' ; +0/' ' ' +' ' /7' "+*+4/' &2(' C.' 2& 4/(; ' /' 9/' "(=2'/(' 7+=' '24' :/&/' :/:
79 19' ..' 7+=' 42' 3/' "+ :' :27 ' ' ' 3!3' /)' ' /**=' 4(/:' 3/&2(/' 44*/' '
)+J/' 9 ; ' 49 (4// '' =9 ** ')=' +' :' +'' 2*:' :+*/' ' '' .EIM' 1 4/:' ' ' 'HY' ? +' :'
"+*+4/' &2(' 79 19' 49/' "(=2'/(' +)(//:' 42' 49/(/' 7+=' +' =; *+('12' J 14 2'' 3/&2(/' 2(:'
+**27' =/J/ '' =9 ** ')=' */' "(=2'/(' /' '; +' ' ' ' .EI. ' /)' J' ' :*/'
'/JJ/(' ; +:/' 49/' "+*+4/' +' :' 7+=' +"" (/P 1 4/:' 3 :

J @? ' A1' >AAE ' = J A ? ' A' =' 1= @DCu @? u G F ?' F@' = @' ;' 'G= ' A? @?E@E% F= ' ' G= ' ?A ' =' 1= @' DC@ @? @% I ' A? ' =' J E@T C D A?' A1' =?' =C @% GF F' =CC @E' F@' C@1 = A?' AC' ACC@ A?' A1' F' J E@ C D A?' A?' ' 1= @' & E@% ' %7 F@' J E@ C DT A?' G= ' ?' =' B@C ' J = @C = ' D=C =C ' = J A ? @E' A' =' A = ' J = @ J @? ' A1' F@' ?= C@' A1' F@' =C @' @ 1 ' ' F@C@' =?' I@' ?A' EA I ' F= ' ' G= =' 1= @' D !@ @? @ H N d

DA?' =?' ?E J @? ' 1AC' 1= @ ' DC@ @?E ?>' F= ' =' D @ @' A1' D=D@C' G= ' =' 8/ ' ?A @% ' =DD@=C@E' F= ' F@' DC A?@C' DCAE @E' =?' C F' ?A @' 1AC' A?@' DA ?E ' 7 ?@' H G= ' = ' @= F' AC?@C' A1' Fp' ?A @% =?E' 7 A?@' DA ?E' H @=C ' DC ? @E' ?' F@' J EE @ ' 4 @' >=B@' ' A' ' 5@C< ?% =?E' = :% 7 ' A? ' G=? ' F ' ' ?A @' F=?> ?> H F@' AA<@E' = ' F@' ?A @% =?E' FA >F ' ' G= ' =' ' ?A @% =?E' AA<' ' A' F@C' J A F@C% GFA' E E' ?A ' AA<' D=C ' =C ' = ' F@' ?A @% =?E' F=E' ?A' E@=' A1' ' I @ ?>' =' @ ' ?A @% =?E' >=B@' :/' ' gE ' A' F@' DC A?@C' 1AC' F@' ?A @' ;' IA F' J A F@C' =?E%E= >F @C' A E' C@=E' $ ' G= ' AIT Z@ @E' F= ' F@' DCA @ C]' I ' ?>' AJ J A?' DC E@? @' F=E' F@' J @=? ' A?' F@' 1= @' A1' F@' ?A @' A1' E@ @ ?>' F= ' ' G= ' ?A ' =' ' ?A @% =?E% F@C@1AC@% F= ' F@' = @' &=' ?A ' G F ?' F@' = @' ;' I % A?' =' = @' C@ @CB@E% ' G= ' F@ E' F= ' F@' A?B A?' G= ' C >F ' ?' J =? ' = @ ' =' D@C A?' > B ?>' F=?>@' GA E' ?A ' AA<' = ' F@' ?A @% F % I @ ?>' A E' ' G= ' =' ' ?A @% =?E' = <@E' 1AC' F=?>@% GA E' I@ @B@' F@' = @ J @? ' A1' F@' D=C ' A11@C ?>' F@' ?A @% =?E' F=?>@' ' F@?' 1% > B ?>' 1= F' A' F@' 1= @' C@DC@ @? = A?% F@' F=?>@' ' > B@?% F@' J A?@ ' ' A I = ?@E' I ' 1= @' DC@ @? @ % N d

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EA. ' 2' &/J :/' /' 7+=') J/' ' +' :' 49/' 1+=/' 7 /' 4' 2&' 2" 49/' 2"/' ') ' 9/' &+14=' +(/' =+ :' 42' 9+J/' 3// '' 4+0/ '' &(2 ; ' 49/' : /P "2= 4 2 '=' +' :' '2' 1+=/' 7+=' 1 4/ : ' 4] : /=/(J/=' 12' = : /(+4 2 '' 79/49/(' 49/=/' 1+=/=' 9+J/' /J/(' 3// '' : /+*4' 7 49' 2 '' 49/' "(2"/(')(2<' : ' ==< ; ') ' 49+4' 49/' / J P : / '1/' =927=' 49+4' 49/' "(=2' /(' 7+=') < *4# 2&' +' &(+<:' '' "+== ')' 49/' '24/' 4' =92<*:' =// ;' 49+4' 49/' 2 '*# "(2"/(' T</=4 2 '' = 0 7+=' 49/' '24/' 6 ' < ' !& '! '56 'E6 #'+' +J+ *+3*/' '24/' &2(' 49/' =< ; ' ; / '4 2 ' / :' '' 4' ^$ 9/' (/ "(/=/ '4+4 2 '' 2&' 49/' "(=2' /(' =' 49+4' 4' 7+=' ? + ' :' 49/' 4(<49' 2(' &+*=/922:' 2&' 49+4' (/ "(/=/ '4+4 2 '' : /"/ ' :=' 2 '' 49/' =4+4/' 2&' &+14=' +4' 49+4' 4 ; / ' <""2=/' +' "(=2' /(' 3/* / J/=' +' '24/' 42' 3/' J+*</*/= =' + ' :' "+==/=' 4' &2(' &<** J+*</ ' 927' 1+" 9 =')< *4' 3/' 4<(' / :' '42' ' '21/ ' 1/' 3# 49/' "2== 3 * 4# 49+4' #/+(=' +&4/(7+(:=' =2 ; /' : J : / ' :' ; +# 3/' "+ :' 2 '' 49/' '24/' ^ //' 49/' (/ ; +(0=' 2&' 2**210 ' ' ' ** + ; =' ' +' :' (27 : /(' ' ! *"6 ' '' /) ' ' J+' =' ' ' !

GA E =B@ I@@? 11 @? A Z 1 =B@CE A1> = F@ = @ = @EH F@ A? b @ A?1AC GF@ F@C F@C@ G= @B E@? @ F= F@ ?A @ G= A1 ?A B= @ F@C@ ?A C@= A?=I @ @B E@? @ F= F@ ?A @ G= ?A A1=? B= @ 1AC = FA >F - : _ ?F@DA ?E F=E I@@?D= E DA? J@? 1AC AI = ? ?> >AAE I 1= @ DC@ @? @ =DD@=C@E F= F@ DC A?@C ? A @E F@ F= 1 A1 =1 B@ DA ?E I=? ?A @ A A?@ C=E@ J=?=?E F@A F@C F= 1 A =?A F@C C=E@ T J=? A? F@ =J@ E= =?E C@b @ @E @= F A 1ACG=CE >AAE A F J GF F @= F A1 F@J E&=?E F@ F@? @ A11 1AC J@C =5@??@1= F@C =!G= A1 AD ? A? F= F@ ?E J@? A E ?A I@ = ?@E= F@DC A?@C F=E ?A C@ @B@E F@ >AAE ?E@C =1= @ DC@ @? @ FA >F F =?A 1@? @G= A I@ J D @E 1CAJ F@ C J T =? @A1@= F F= 1A1 F@ A?@ I@ ?> @? A E 11@C@? ?E B E = A? F@ =J@E= ; I F@C@ G= ?A E C@ DCAJ @ ?@ F@C A1 F@ @ @C GF F=E I@@?^ @? A F@ 1=E@C F= F@A F@C F= 1GA E I@ 1ACG=CE@E A F J N=d

DA?=? ?E J@? 1AC AI = ? ?> I 1= @ DC@ @? @ 1CAJ]T A?= J A1 JA?@ 1 =DD@=C@E F=] A? G= = J@JI@C A1 7 F@ =C A1]IC E>@ AE>@ A1 EE @ AG = C A? A? C@? ;H =?E F A? C I A? G!= ? ?@D@?D@ D@C 1AC ? >F F@ DC A?@C G= @ C@ =C A1 F@ AE>@H =?E G= F E A C@ @ B@ JA?@ 1CAJ F@ J@JI@C ? AE>@ FA C ; I I@ F=E ?A = FAC A C@ @ B@ =? A A1 F@ AE>@; A? F@ . F A1 "AB@JI@CH F@ DC A?@C @?E@C@E A'L] A? A A1 F@ AE>@ F@ 1A AG ?> & C ? > L

! 7 =CZ A1]IC E>@ AE>@H C A? A? C@?
! C =?E C N CA F@Cd 7 "AB : F 9:9
7 F@C@I > B@ A ?A @ F= A AG@ A A C AE>@ 1AC A?T C I A? , F@ J A1 E H E@A? F@ - F ?
7)A C C@ D@ 1 H
7 A * C A @DF] A? 7 K K ; 0

F@ - F A1 "AB@JI@C G= F@ ?@] AE>@ ? >F =1 @C F@ : F 5C A?@C = EH 7 F=B@ CA >F A = J JA? 1AC F@ JA?@ A AG@ F@ AE>@ H] A? AD@?@E F@ D=D@CH =?E = EH! # A AG@ F= = JA ? H F C @@? F ?> =?E ? ?@D@? @VH 5C A?@C = EH 7)A EA H] A? = EH ! ?A B@C A?> ? @ D= E = J = F@ AE>@ A A 75C A?@C = EH 7 F= G F=B@ CA >F A = J JA? 1AC F@ JA?@ A AG@ F@ AE>@ H] A? = EH 73@C G@ H =?E D= E F J 1A C @@? F ?> H =?E C@ @ B@E FC@@D@? @ ? F=?>@ =DD@=C@E I F@ IAA< A1 F@ AE>@ ? F@ DC A?@CH GC ?> F=] A? F=E D= E FC@@ F ?> =?E ? ?@D@? @ A? F@ - CE A1 AI@C = F@ AE>@H =?E F= A? F@ - F A1 "AB@JI@C GA J A1 ? D@D@? @ =?E = I C D A? A1 @ >F D@? @ G@C@ E @ 1CAJ F J F@ DC A?@C = A ? @E A F@ C@= C@C A? F@ - F A1 "AB@JI@CH =?E D= E F J 1A C DA ?E

W(* /) < J+'= /** . ED + ; = =+ : 0 7 =9 42)<+(: ; #P =/*&+)+ '=4 3/ ')=<""2=/ : 42 92* : 49+4 + "/(=2" ;)94 '24 3/ 12 'J 14/ : 2 ' + ' 'P : 14 ; / 4 &2(234+ ' ') ; 2 '/# 3# &+*=/ "(/4/'1/= 3# ; /+ '= 2& =<19 + '24/ + =49 = "(2J : / : 4 7/(/ "(2J/ : 4* +4 49/ "(=2 '/(' 0'27 ')49+4 49/ 3+ '0 9+ : =42""/ : "+#P ; /'4 + ' : 12<* : ' 24 "+# 4= '24/= ' &<**

(/"(/=/'4/ : 49/ '24/ 42 3/ 2& &<**J+*</ + ' : 49/ '24/ 2&+ =2*J/ '4 3+ '0 $ (27 : /(' 0 &+ "/(=2 ' "(/=/'4= + ' 24/ &2(-C + = +)22 : ' 24/ &2(49+4 + ; 2 '4 0'27 ') 49+4 49/ 3+ '0 9+ = =42""/ : ' 4 72<* : + ; "*# =<""2(4 + ' ' : 14 ; / 4 &2(234+ ' ') ; 2 '/# 3# &+*=/ "(/4/'1/= S
1 3 /) , +=4/(=2 ' G 0 .MM /((' # 7+= +*=2 "(/=/'4

&49/ =4/7+(: 2& + *2:)/ 2& : : L/**27= (/"(/=/'4= 42 + ; / ; 3/(49+4 9/ 27/= + *+()/(=' ; 49+ ' = 49/(/3# 234+ ' = =<19 *+()/(=< ; 3/ =)< *4# 2& 234+ ' ') =<19 =< ; 3# &+*=/ "(/P 4/'1/=

@ @B@?' F ?> '=?E' A?@'D@?? %' I '?A' J'A1' F C @@?' F ?> '=?E' ? ?@D@? @'1CAJ'] A?' 'G=' AIZ@ @E%'1 C %' F=' F@C@'G=' ?A' 1= @' DC@ @? @' G F ?' F@' = @%'=?E' F=' F@' 1= 'A1'GF='G=' E @' G=' = ' J F' G F ?' F@' <?AG @E>@' A1'] A?' = ' A1' F@' DC A?@C' @ A?E %' F=' 1' F@C@'G@C@' =? '1= @' DC@ @? @' 'G=' F@'GC @?' D=D@C'GF F' A >F ' A'F=B@'I@@?' @ 'A ' ?' F@' ?E T J@? ' ?' =? G@C' A' F@' @ A?E' AIZ@ A?%' 'G=' A? @?E@E' F=' F@' 1= @' DC@ @? @' G=' F@' AC=' C@DC@ @? = A?' A1' F@' DC A?@C' F@' AIZ@ A? 'G@C@' AB@CC @E%'=?E' F@' DC A?@C' A?B @E;' =?E% DA?' =' = @' C@ @CB@E%' 'G=' A? @1 E@E' F=' F@C@' G='?A' 1= @' DC@ @? @' G F ?' F@' J @=? ?>' A1' F@' = @;' ?' = ' F@' = @ ' F@' JA?@ ' F=E' I@@?' AI = ?@E' I ' =' 1= @' C@DC@ @? = A?' A1' =' 1= %'A1' GF F' F@' D=C ' A E' ?A 'DA I 'F=B@' I@@?' A>? K=? %'=?E' F@' C F' A1' GF F' F@' F=E' ?A' R@=? ' A1' = @C = ? ?>;' I ' F@'Z E>@ ' G@C@' ?=? JA 'A1'AD ? A?' F= ' F 'G=' ='1= @' DC@ @? @' G F ?' F@' = @ ' ?E' E@C A?%' %' = E%' 7 1' =L J =?' C@DC@ @? ' = ' =?' @] ?>'1= ' F= 'GF F' ' ?A ' =?' @] ?>' 1= %'=?E' A' >@ ' A C' JA?@ %' F= ' ' ='1= @' DC@ @? @' ;' 1AC' ? =? @%' F= ' =' @C = ?' F C F' F=E' I@@?' I %'=?E' F= ' F@C@'G= ' ='E@I ' 'E @' 1AC' F@' I ET ?>% GF@?%' F@C@' G= ' ?A' E@I ' E @;' F= 'GA E' I@' ='1= @' DC@ @? @;' @ ' F@' J = @C' J >F ' @= 'I@' ?b C@E' ? A' =?E' = @C = ?@E ' C' =<@' F@' AJ JA?' = @' F@'DC A?@C' = %' [' = J ' @? !I ' * C ' ' 1AC' ='D= C' A1' FA@ n' '?A ' F= ' ='1= @' DC@ @? @'V @ ' ?b C ' =?' I@' J=E@%' =?E' =1 @C' F@' F ?>' F= ' F=DD@?@E' = ' ' J=E@%' =?E' F@' 1= @FAAE' E@ @ @E ' * C ' ' J >F ' B8' 1 B@' J @ ' A11%' AC' F@' J >F ' I@' ='?@] EAAC' ?@ >FIA C';' I ' 1= @' DC@ @? @' AC'?A' =??A ' E@D@?E' A?' J @=>@ Ĥ 7 F@' A E' =G' =IA ' ='1= @' A<@?' G=' ='J F' JAC@' C ?>@? 'C @' & F ' FA E' G@'?A 'FA E' F=' ='J@C@' @' =IA ' =?'@] ?>'1= ' A E' 1AC' ='1C= E @?' D CDA @' FA E' I@' ='1= @' DC@ @? @' V Ĥ N d

' =<"/('4/'P : / '4' '' +' 1*249 ')' ; + '<P &+142(# 9+J ')' 42' 0//'" + '' +112<'4' 2& 49/' '< ; 3/(' 2& =9/+(/(=' / ; P '"*2#/ : ' + ' :' 49/' + ; 2<'4' 2& 49/ (' /+(' ')=' + ' :' 42' : /* J/(4' '' /J/(# 7 / /0' : /P * J/(/ :' '' +' &+*=/' +112<'4' 3# 79 19' 9/' 234+ ' / :' +' *+()/(=< ; ' 49+ '' 7+=' :</' + ' :' 4' 7+=' '92* : / '' 42' 3/' 7 49 '' 49/' HM' ! /2(' G ' 1 ' G&

' G=' =>C@@E' DA?' I ' = ' F@'Z E>@ %' F=' =' = @' G=' G F ?' F@' ' @A ' -% ' - :%' GF@C@' F@' " #!' 56 ' " 6 #'<''& 6 '4*' < ' *6 '(E" G' =?E' F@ 'F@ E' F=' ?' F@'1A AG ?>' = @' F@' DC A?@C' GA E' ?A 'F=B@' AI = ?@E' F@' C@E 1' I '1AC' F@' 1= @' = A ?' GF F' F@' E@ B@C@E ' F@' DCA @ AC %' 1CAJ' GFAJ' F@' DC A?@C' G=' F=C>@E' G F' AI = ? ?>' JA?@ ' I ' 1= @' DC@ @? @ %' G@C@' A F @C ;' F@' DC A?@C' G= ' =' F@=C J =?%' ?' F@ C' @CB @%' =?E' @JD A @E' A' D@C ? @?E' F@' A F@C' F@=C J @?%' =?E' A' =<@' =?' = A ?' A1' F@' D@C A? ' @JD A @E%' =?E' A1' F@' =JA ?' A1' F@ C' G=>@ ' =?E' @=C? ?> ;' = ' F@' @?E' A1' @= F' G@@<' F@' G=' DD @E' G F' JA?@ ' A' D= ' F@' E 11@C@?' F@=C J @?%' I ' F@' @C<' A1' F@' DCA @ AC %' GFA' =EB=? @E' A' F J' F' J' = %' = ACE ?>' A' =' GC @?' = A ?' AC' ?A @' E@ B@C@E' A' F J' I ' F@' DC A?@C%' G=' ?@ @ =C ' A' D= ' F@J' F@' DC A?@C' G=' ?A ' = FAC K@E' A' EC=G' 1CAJ' F@' @C<' 1AC' JA?@ ' >@?@C= 'A?' = A ? %' I ' & " '*4"' < ' >& '6 >6 '' 6" #' <'' < ' < 6"& G' =?E' F@' @C<' G=' ?A ' = FAC K@E' A' D= ' F J' =? ' J ' @] @D ' GF=' F@' =CC @E' ?' F ' = A ?' AC' ?A @' = ' F@' =JA ?' A1' GF=' G=' E @' A' F@' F@=C J @?' 1AC' F@' GAC<' F@ ' F=E' EA?@' F@' DC A?@C' A?' F@' F' A1' @D @J I@C%' . %' E@ B@C@E' A' F@' DCA @ ACH' @C<' =' ?A @' ?' GC ?>' ?' F@' 1A AG ?>' 1AC J %' 7 F

" B /) ' ; U 22**/#' .' / ' ' ' ' AAN' H M' ; ' NE' # ' .EAM' ?=/' +*=2 ' ' /==2" ' /+(=' ' ' IGG' E4 ' 2' '24 1/' 7+=' 4+0/ '' 2& 49/' "2 '4' +32<4

=/44 ')' 2<4' 49/' "+"/(' 7 (4 ')' 3<4' +=' 42' 49+4' "2 '4' =/' /) ' &' 2<*=2 ' ' .' /' ' ' ANG? G .' " ' AHD

A C F @CV 1 G= J @C@ F= F@ F=E D EAG?F@ =J A ? F=C>@E A?D@ = A?= J @C@ > @ = A GF= F@ E @ J >F C@= =J A ? A F@?F@ = @ J 1= ; I 1F@ ? @?E@E A C@DC@ @? F= F@ = A ? A? = ?@E =?= A ?A1 GF= F=E I@@?EA?@I F J = F@ =>@? A1 C F @C AC GF= GA E I@EA?@ N d =?E F@ AI = ?@E F@ JA?@ A?F@1= F A1 F = @J @? G@ F ?<F= 11 @? A = ?F@ ?E J@? 783

C= E @? C@DC@ @? ?>=1= @D= T IAA< A I@ >@? ?@

A ? = @>@E F= F@ DC A?@C DC@ @?E@E F= F@ F=E =?= A ? G F F@ J @C <=B ?> H =?<=?E F= :_ - E G= F@?E @ A F J A?F@ = E= A ?= =?E F= = IAA< GF F F@ E@DA @E G= F@ >@? ?@ D= IAA< ?GF F F@= A ? G= <@D =?E F= F@G@E C F@ = @A1 F = A ? G F F@ I=?<; I J @=? A1 GF F 1= @ DC@ @? @ , F@ AI = ?@E @?=CE A1 A F F@ DC A?@C G@?? A =FAD =?E AI = ?@E F@ A F = ?> F= F@ F=E ?A JA?@ =IA F J =?E F@G ?> = IAA< GF F D CDAC @E A I@= D= IAA< I@ G@@?F J @1 =?E F@ J @C <=B ?> H =?<1CA J GFQF F@C@ =DD@=C@E A I@= I= =? @ A1 :_ - 8 ?F 1=BA C ?F@ I=?< F@ DC A?@C E@DA @E F@ IAA<=?E= F@ = J @ J @>=B@= @ @C = ?>F= F@GA E D= 1AC F@ >AAE G F ?] &!@@< AC @ @1AC1@ = E A ? GF F A F@CG @F@G= A AI = ?A? F@ DC @ F@ @? C @ ?F@ IAA< G@C@ DCAB@E A I@ 1= @=?E F@ !@ G= ?A I= =? @ E @ A F@ DC A?@C I F@ I=?< I F = A ? F=E I@@?A @E =?E = @ @C A1 C@E 1AC . f E= @E F@ E= F@ = A ? G= A @E G= 1A ?E A?F@ DC A?@C G= C>@E F= F@ 1= @ DC@ @? @ = @>@E G= = J @C@ @ ; F= F@ ?E J @? A >F A F=B@ =B@CC@E F= I C@= A?A1 F@ 1= @ DC@ @? @ F@ DCA @ C] F=E C @E F@ DC A?@C AC F= F@ IAA< F=E I@@?E@DA @E = = @ CF ; =?E 1 F@ @ AIZ@ A? E E ?A @@E F= F@ DC A?@C G= @? @E A I@= b @E 1 F@ Z C I@ @B@E F= F@ DC A?@C E E ?A ? @?E A E@1C= E F@ DCA @ C] A = I J @C@ A AI = ?] G@@< H C@E F=CE E EA I @E F@ 11 @? A1 F@ ?T E J @? I @1 F@ b @ A? A1 1C= E A F@ Z C =?E F@ A?T B @E G= F@?1 C F@C AIZ@@ @E F= F@ ?E J @? E E ?A = @ F= F@ D= IAA< G= 1= @ G F ?> F@ DC A?@CH <?AG @E>@ F=CE = E 7 =C ?> F ?> A = F= 1 =J =?>A@ ? A =FAD =?E = [=J =C F J =?=?E F=B@ JA?@ ? F@ I=?<n =?E F@G =IAA< A ACCAIAC= @ F = @C A? I EA@ ?A > B@ =?ACE@C A?F@ I=?<1AC D= J @? F@ =I @ A I@ C=? DAC @E I 1 1 =E 11@C@? F ?> G11 @?= J =? = [F=B@ 8 ?= I=?< =?E 1 A > B@ J@ >AAE G > B@ A =?ACE@C A?F@ I=?<n =?E I A EA ?> AI = ? F@ >AAE F@?@=C =?A11@? @G F ?F@ = @H ?E F=B ?> A? E@C@E F@ = @ = I @b @? E= (F=CE = E F= FA >F F@ FA >F AJ @B@C >C=B@ b @ A? A1 =G =CA @ DA?F ?E T J @? = FA @ AIZ@ A? =DD@=C@E A?F@ C@ ACE =?E F@ DC A?@C J >F F=B@ F@ I@?@1 A1 F@ J A?= G C A1 @CCAC F@ 1@ F= F@ DCAD@C A C @ G= ?A A =CC@ F@ Z E> J @? N=d

5B 9 = + '+11<(+4 /V"(/== 2 2 :2<34 79+4 49 6<:) = ; /+ 4 7+= + +112< 4 2& 79+4 7+= 49 + ; 2< 4 2& :<4# 79 19 7+= :</ + : ; <=4 3/ "+ : WXd /) 9(=4/# /((/2<=*# (/P "2(4/ : 2V GHN .EII 9/(/ 7+= +

&<(49/("2 4 ; + : / +=42 49/ : /=1("4 2 "2& 49) ; 2 /# 7 9 19 = ; ; +4/(+ 1/ 49/ . I .A /4 1 . MM = .E J2* . " GI W+b /) 2*2 # G 2V .DG 4 = 24 =4+4/ : 7 9+4 :<1/ : 49/ "(2=/ 1<4(V 42 "+(4 7 49 49/ 1*249

F@ AB@C @@C A1 F@ DC A?@CH D=C F = <@E F J GF F@ E E ?A GAC< A DDAC F 1= J GF F C@ @ B@E D=C F C@ @1; F@ DC T A?@C = E F@ F=E ?A FA@ $ DA?GF F F@ AB@C @@C >=B@ F J = D= C % I F@ DC A?@C F=E = F@ J @ GA >AAE D= C DA?= = @ C@ @CB@E% F@Z E>@ FA >F F= F G= ?A G F ?F@ % @A -% -:%'=?E F= F@ A?B A?G= G CA?>; 1AC G= C= F@C =1= @ @] @ 1AC ?A GAC< ?>% F=?= =1= @ DC@ @? @ A AI = ?>AAE N d

AI = ? ?> DCAD@C I 1= @ DC@ @? @ = J E@J@=?AC% =?E = D@C A? @?>=>@E ?' J E@J@=?AC =C@ DC ? D= % =?E F@ = EA?@ I A?@ A1 F D@C A? ?' 1 C F@C=? @ A1 F@ AJ JA?AIZ@ % =C@??' A? @JD = A?A1 =G F@ = A1 F@A F@C % FA >F F@ J= I@4=I @? % 1 =DD@=C F= @B@C= D@C A? =C@ @?>=>@E ?' F@ AJ JA?D CDA @ A1 A = ? ?>' >AAE I 1= @ DC@T @? @ % =1= @ DC@ @? @ J=E@ I A?@ A1 F@J ?' 1 C F@C=? @ A1 F= D CDA @% ?' A? @JD = A?A1 =G =1= @ DC@ @? @ J=E@ I F@ A F@C = A% =?E G DDAC =?' ?E J@? % GF F = @>@ F= F@ 1= @ DC@ @? @ G= J=E@ I F A F@C D@C A? % FA >F F@ G@C@ =I @? = @ J@ GF@?' F DC@ @? @ G= J=E@% 1 3

G= = E% F= FA >F =' J=?' =??A I@ > A1 1AC>@C % J@C@ I D= ?>' F J @ 1 A11 1AC F@ D@C A?GFA @ C@= >?= C@ =DD@=C A =' GC @?' ? C J@? % = FA >F 1AC F@ D CDA @ A1 1C= E% =?E ?' A? @C G F F C@= D@C A?% F@C@ I@ ?>' ?A 1= @ J=< ?>% @ F= F =DD@=C@E A I@ =' 1= @ DC@ @? @ G F ?' F@ @A -% -: N _d

F@ 1 C A ?' F=C>@E F= F@ E@1@?E=? E E ? =G1 DC@ @?E F= F@ G= * C F ?> % GFA F=E C@E * C =C<@ = F@]1ACE ?1 CJ=C %4=?E F= F@ F@C@I AI = ?@E =' AB@C@ >?' 1CAJ 5= J@C G F ? @? A F= F J A1 F@ =J@ F@ @ A?E A ? F=C>@E F@ E@1@?E=? G F AI = ? ?>' I J =C DC@ @? @ = AB@C@ >?' 1CAJ F@ = E 5= J@C% G F ? @? A F@= F J ?A1 F@ J A1 1 B@ F ?> % D=C @ A1 F@ B= @ A1 F@ = E = J@? A?@E D @ @ A1 F@ CC@? >A E A ? H =DD@=C@E F= F@ E@1@?E=? J=E@ F@ g C@ @? @ F=C>@E% =?E F@C@I ?T E @E F@ DCA @ AC A I =' IA @ A? = ? ?>' AJ@ F ?>' GF F F@ = E GA E C@ F@ @ @ A1 F@ DCA @ ACH F E% 1AC 1 B@ F ?> ; F@ DCA @ AC >=B@ F J =' AB@C@ >?% =?E F@ E@1@?E=? >=B@ F J 1 1 @@?' F ?> ? @] F=?>@ G= AIZ@ @E% 1 C F= % F@ 1 C A ? G= ?A DCAB@E% = F@ E@1@?E=? E E ?A ? @?E A E@1C= E A1 =' AB@C@ >?' I A1 1 B@ F ?> @ A?E % F= F@ @ A?E A ? A >F A F=B@ F=C>@E F= F@ E@1@?E=? AI = ?@E 1 B@ F ?> G F ? @? A E@1C= E 5= J@C A1 F@ =J@ F CE % F= F G= ?A =?' AI = ? ?>' I 1= @ DC@ @? @ G F ?' F@ % = F@ JA?@ G= AI = ?@E' I F@ = @ A1 F@ 11 ?' F@ IA @ ?E G= F@ E% 1 C % F= A E ?A I@ =<@?' F= F@ E@1@?E=? ? @?E@E A E@1C= E 5= J@C A1 =' AB@C@ >?' ; I@ = @ F@ ?A A? >=B@ B@C A ?' A' F@ =JA ? A1 1 1 @@?' F ?> A F J% I G= = A?>' =' J = @C A1 I=C>= ?' F= F@ FA E EA A @ A?E % F= F@ = @>= A? ? ?' F@ @ A?E A ? G@C@ DCAB@E ?E = % F= F@ A? D=C A1 F@ DC@ @? @ F= G= DCAB@E

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F@C@' J >F ' I@' =' 11 @? ' 1= @' DC@ @? @' G F ?' F@' ' @A' -% I ' F@' = ' =?E' A?E ' A1' F@' D=C % G FA ' =? ' B@C I = ' C@T DC@ @? = A? ' A1' =' 1= @' =?E' 1C= E @? ' ?= C@ ' ' A ? ' DA?' F= ' = @' = @E% F= ' F@' DC A?@C% ? @?E ?>' A' F@= ' ' @@I@@% A1' F ' JA? @ % E E' 1= @ % , % @C% D I F% A11@C% =?E' @?E@C' A' F@' = E' ' =' 1= @% 1AC>@E% =?E' A ? @C1@ ' D=D@C% = ' =?E' 1AC' =' C @' D=D@C% =?E' E E' 1= @ % <?AG ?> % =?E' E@ >?@E % DC@ @?E' A

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G= ' C>@E%' F= ' ?' F ' = @' F@' C@E 'G= ' > B@?' A' F@' ?A @%' =?E'
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1C= E' A? @E' ?' F@' 1=IC = A?' A1' F@' ? C J @? %' ?A ' ?' =? '
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'G= ' ?A' A11@? @' A' 1AC>@' %' AC' A' AI = ?' J A?@ ' DA?' ' GE @?'
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= @' G= %' FAG@B@C%' @1 ' A' F@' Z C %' G F' =' E C@ A?' F= ' F@'
@B E@? @%' 1' C @%' = ?@E' IA F' AC' A?@' A1' F@' = @C' A ? ' A1' F@'
?E J @? ;' =?E' F@' Z C ' 1A ?E' ' @ ' DC A 1@C' > ' A?' IA F' F@ @'
A ? ';' =?E%' A?' =' = @' C@ @CB@E%' F@' J =ZAC ' A1' F@'Z E>@ ' FA >F '
F= ' F@' A?B A?' G= ' C >F %' =?E' F= ' ' G= ' =' 1= @' DC@ @? @%'
= FA >F' F@' ?A @%' DA?' F@' 1= @' A1' %' GA E' F=B@' I@@?' >AAE' 1AC'
?A F ?>' ?' DA ? ' A1' =G%' 1' ! ' F=E' ?A ' I@@?' *6 ' `65" ' %'
G= ' A1' =' E 11@C@? ' AD ? A?%' =?E' FA >F ' F= ' F@' FAD <@@D@C' G= '
?A ' F@= @E' 1' F@' D=C @E' G F' F '>AAE ' 1AC' ='D @ @' A1'D=D@C%' GF F'
F@' J ' I@' DC@ J @E' ?' =G' A' <?AG' G= 'GAC F' ?A F ?>' 1' C @%' 1*3'

3f "(=2' /(' F@' ?E J @? ' F=C>@E' F= ' F@' DC A?@C' 1C= E @? ' DCAE @E'
234+ ' / :' =?E' E@ B@C@E' A' % F@' G 1@' A1' ' (= ?@C%4' GF F' ' = ?@C' G= '
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+' "2=4 2&& 1/' J A? ' = @E' =' J A?@ ' ACE@C%' A' G %' 1AC' F@' D= J @? ' A1' F@' J' A1'
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=2*(' 4+/9' = E' ACE@C;' I ' J @=? ' A1'GF F'1= @' DC@ @? @' F@' ? =G1 %' , %' AIT
4 2 ' / :' ''+' = ?@E' 1CA J' F@' = E' ' (= ?@C' F@' J' A1' A?@' DA ?E' A1' F@' JA? @ '
; 2 ' /# 2(:/(' A1' F@' = E' ' (= ?@C%' G F' ? @? 'Z%A' F@= ' =?E' E@1C= E' F@' = E'
79 19' 9f' "(/P %' (= ?@C;' =B@CC ?>' = A' F= ' F@' DC A?@C' G= ' ?A ' F@' D@C A?'
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"+# ; / '4m 3<4 F@C@ ?' J @? A?@E ' F@C@' G= ' =' @ A?E' A ? ' E 11@C ?>' 1CA J' F@'
9f' : -' '24 1 C 'A? ' ?' = @> ?>' F@' JA?@ ' A' I@' AF?' AC@CH%' =?E' F@'
; +0f' + '# ? @? ' A' I@' A' F@= ' F J ' ' =DD@=C@E' F= ' F@' DC A?@C' G@?' A'
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4 2 '' '' 2(: /(@ @C ' E C@ @E' A' 7 AF?' AC %' DA A11 @%' " A ?>F= J %' A' I@'
42' 234+ '' 49f' @1 ' ' = @E' 1AC H * C ' (= ?@C' 1 ?E ?>' = J A?> ' F@' @ @C ' A?@'
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=?E' DDA ?>' ' A' I@' F@' @ @C' 1AC' GF F' F@' DC A?@C' ?b C@E%'
11@ B@C@E' ' A' F J ' F@' E C@ A?' F@?' DA?' F@' @ @C' G= ' =' C@T
E C@ A?' A1' ' 1CA J' " AC F= J D A?%' A' G!F F' D = @' ' F=E' I@@?'
AC > ?= ' @? ' 1CA J' " A ?>F= J ' F@' DC A?@C%' A?' C@ @ B ?>' %'
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7 ' G= ' AA' J F' 1CA J' * =? F@ @C;' H I ' F@' D= E' F@' JA?@ %' =?E'
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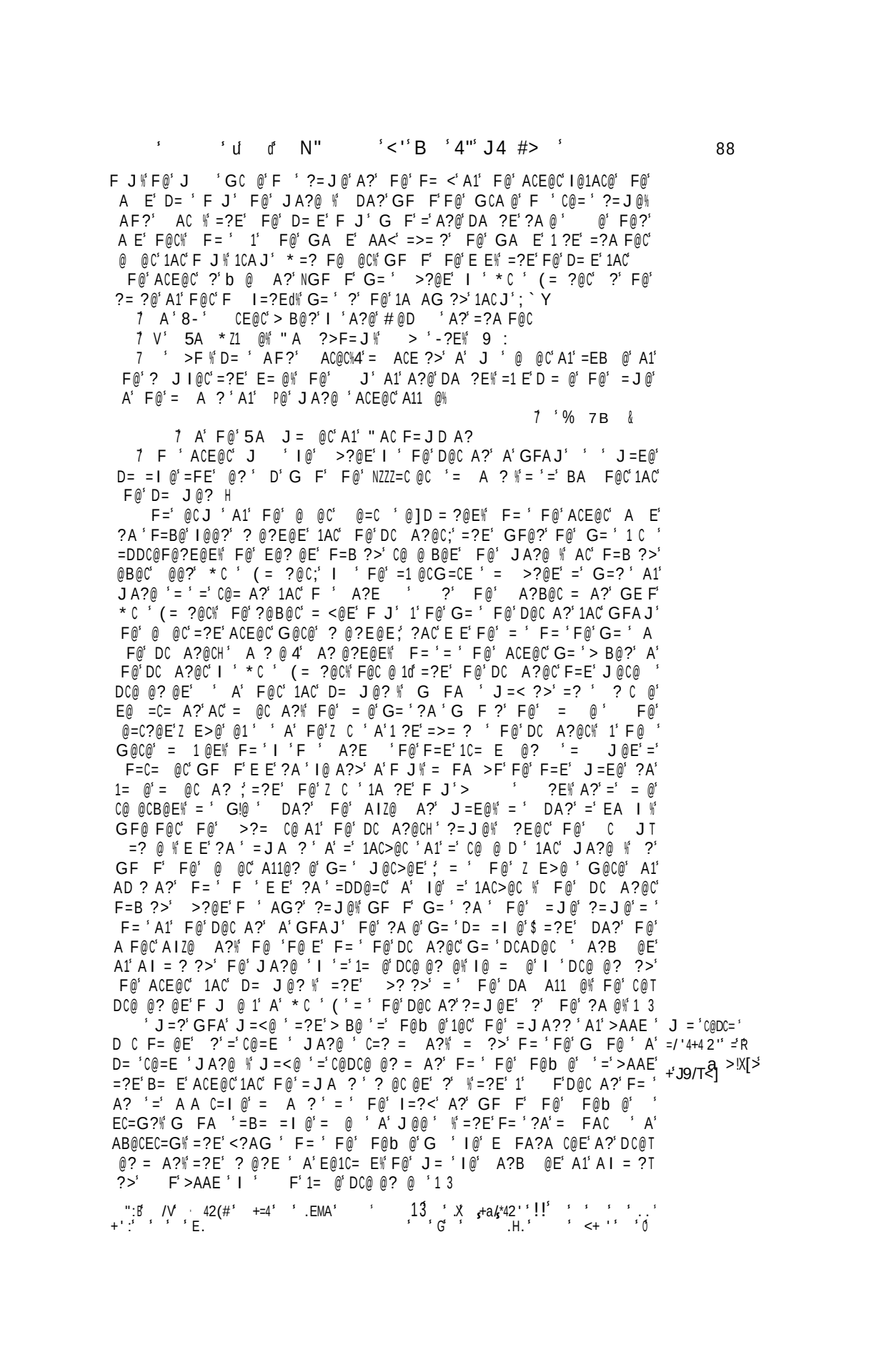

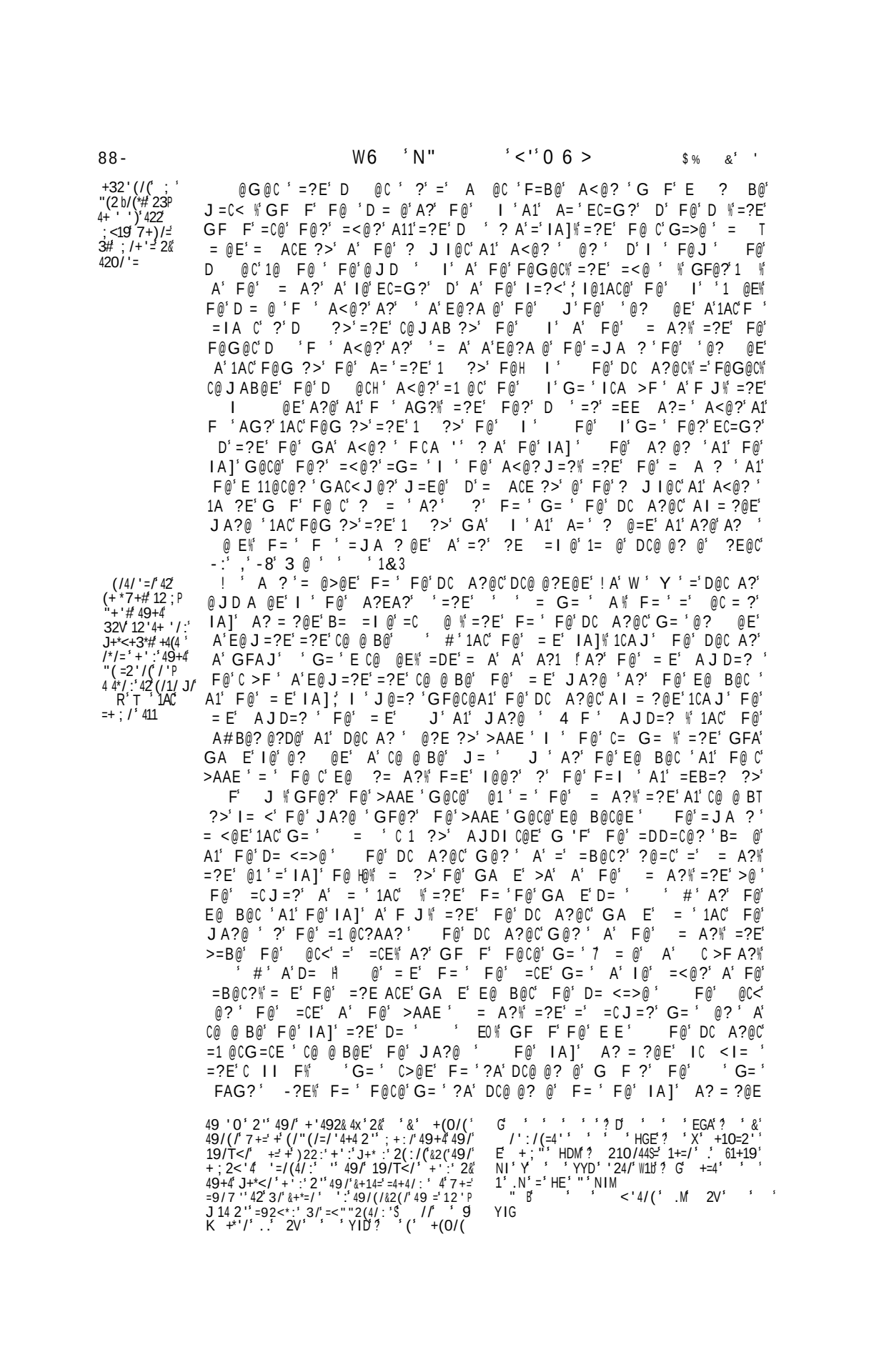

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= ?>' F= ' =' J C@DC@ @? = A?' A1' b = ' ' @?A >F% 1' <?AG?' A' I @' 1= @% =?E' J =E@' G F' ? @? ' A' E@1C= E' ; =?E' J ' ICA F@C' C=J ' G@ ' A? C % G F' F J ' "AG% =DD ?>' F@' AI @CB= A? ' ?' F= ' = @% ' F ?<' F@' = @J@? ' ?' F@' DC@ @? ' = @' ' ?A ' ?' 1AC J' =' J = @C' A1' AD ? A?' AC' DC= @% I ' =' E ? ' = @J@? ' A1' =' J = @C' A1' 1= ' = AJD=? @E' I ' C J =? @ % B K % F= ' F@' F= ?' G= ' A1' 8 =C= '>A E% =?E' F= '?A ' C @% =?E' <?AG?' ?A ' A' I@' C @% =?E' J=E@' B F' ? @? ' A' E@1C= E ' AG' EA@ ' F ' = @' E 11@C 1CA J ' F= ' A1' =' J=?' GFA' = @ '=' F= ?' A' I@' J=E@' A1' A?@' F ?>' GF@?' ?' 1= ' ' ' J=E@' A1' =?A F@C' ' F@' = @' 'E ?> F=I @' 1CA J ' F@' I > ' B' "'6 ' I@ = @' F@C@' F@C@' '=' = @J@? ' A1' =' D@ 1 '1= ' G F ?' F@' DC T A?@CH ' <?AG @E>@% B K % A1' F@' =J A ? ' A1' F@' >A E ' F@ H@1AC@% GF@ F@C' G@' AA<' = ' F@' G J @' A1' F@' C J =? @ % AC' = ' F@' = @T J@? ' A1' F@' b = ' A? % J@' A?B A?' J ' I@' =11 CJ@E H U 'E '" & @ % $ 7 C @% % ?' F@' I > ' B' "'6 ' G= ' A1' AD ? A?' F= ' 1' F@' = @J@? ' F=E' I@@?' [' ' < ?> A?H ' n' 'GA E' F=B@' DDAC @E' F@' A?B A?' ;' =?E' A' G@C@' @B@C= ' A F@C' A1' F@' Z E>@ H

X' &+*=/' "(/[' 4/+1/ ' 0 '27P ')*# ; +: /' 42' 234+ '" ' ; 2 ' /#' =' ' : 14+3*/ ' 492<)9' 49/' ; 2 ' /# 7+=' 234+ ' / :' 3# ; / ' '=' 2& +' 12 ' 4&+14 ' 79 19' 49/' "(/ ' =/1<42(' 7+=' ' :<1/ :' 3# 49/' &+*=/922 :' 42' '+0/

& F@C@' DA?' =?' ?E J@?' A? = ? ?>' A ? '1AC' =' A? D C= % =?E' AI = ? ?>' JA?@ ' I ' 1= @' DC@ @? @ V% T < ' @B E@? @' G= ' ?' @11@ ' F= ' F@' DCA @ AC' G= ' A E' I ' IA F' # * #6 ' <6 ' 54' FAC @ ' F=E' I@@?' F@' DCAD@C ' A1' =' =E 'E@ @= @E% 6 #' 5 " ' F@?' F@' DCAD@C ' A1' F@C' @C% =?E' ?@B@C' F=E' I@@?' F@' DCAD@C ' A1' =' FAC @ ' E@= @C% =?E' F= ' F@ ' G@C@' b @ ' =?E' C= =I @% = ' F@ @' = @J@? ' I@ ?>' =I A @ ' 1= @% =?E' F@' E@1@?E=? ' <?AG ?>' F= ' ?A F ?>' I ' =' 1 ' I@ @1' ?' F@ C' C F' GA E' F=B@' 1?E @E' F@' DCA @ AC' @' J =<@' F@' D C F= @% = ' F@' C@D@= @E ' ?1AC J@E' F@ J ' F= ' F@' G=? @E' F@' FAC @ ' 1AC' F ' E= >F @C H @' F@' @B E@? @' G= ' F= ' F@' E@1@?E=? % ?' ACE@C' A' ?E @' F@' DCA @ AC' A' J =<@' F@' A? C= ' A1' D C F= @% J =E@' F@' 1= @' DC@ @? @ !' =1AC@ = E' C@ D@ ?>' F@' FAC @ % =?E' F@C@I ' ?E @E' F J ' A' I ' F@ J ' =?E' D=C ' G F' F@' DC @ H153' F@' A? D C= ' G=' J =E@' A ' A' F@' @? C@' = T 1= A?' A1' F@' Z}C % GFA' A?B @E' % =?E' DA?' =' J A A?' 1AC' =' ?@G' C = % ' G= ' A? @?E@E' F= ' ?A F ?>' G= ' DCAB@E' I ' =' B=CC=? % GF F' G= ' ?E@@E' 1= @% =?^1' J 4' =1 @C' @CE % I@' = J@E' A' F=B@' I@@?' G 1 ' A' ;' I ' F= ' G= ' ?A ' F@' >CA ?E' A1' =?' ?E T J@? ' ACE' # @?J =?% ' % 7 ' >@?@C= ' b @ A?' @@J ' F@C@' A' I@' C= @E% BF@ F@C% 1' JA?@ ' I@' AI = ?@E' FCA >F' F@' J@E J ' A1' =' A? C= ' I@ G@@?' F@' E@1@?E=? ' =?E' F@' D=C ' E@1C= E@E% F@' F=C>@' A1' 1= @' DC@ @? @ ' =?' I@' = ?@E ' & F' AJ@' D = I ' F@' F ?>' AI = ?@E' FCA >F' F@' 1= @' DC@ @? @' J = ' I@' = E' A' I@' F@' A? C= % =?E' ?A ' F@' JA?@ ' GF F' ' D= E' ?' 1 1 J@?' A1' % =?E' GF F' F@' D=C ' ' DCAI=I1 ' I ' ' @CJ ' =I @' A' C@D= ' F ' B=' F@' >CA ?E' A?' GF F' J ' ICA F@C' @E= @' E C@ @E' =?' = T b = ' ?' ?' 3' J4#"! 2 4 '1?3' ' F= ' E@ A?' G= ' = @ ' J F' EA I @E' I ' F@' Z E>@ ' B F' C@1@C@? @' A' =' = @' C@ @CB@E' I ' F@' (@ ACE@C' A1' A?EA?% 1'3' ' D@C A?' GFA' 1= @ ' DC@ @?E@E' F= ' F@' G= ' @J >C= A?' AJJ A?@C' F@C@I ' ?E @E' F@' DCA @T AC' A' @? @C' ? A' =' A? C= ' ! F' F J % =?E' A' D= ' F J ' ?E@C' '=

"N8' 9/' '4/1/ : <)' =4+4/ ; / '4' =' 4+0/ '' &(2 ; '49/' 6<:) ; / '4' 2&49/' 1"V (4 W+b' ' ' ' 'YY. ' 79/(/'49/' : /&/ ' : +' 4' "<("2(4/ :' 42' =/** +' (/J1 $ 2 ' +(# '4//(/=4' 79 19' 9/' 9+:' "(/J 2<=*# =2* :' 42' +' 249/(' "/(=2 ' '+" :' / '4/(/ :' '42' +12J/ ' +' 4&2('4 4*/ ' // ' , ' /+0 ' ' . ' 2V' ' ' 'GDM' 2' 4

7+=' 2 '1/' =+ :' 49+4' +' ' : 14 ; / '4' 72<*:' '24' * /' &2(' +' &+*=/' "(/4/ '1/' 3#' +' : /1/ 4&<*' (/"(/=/ '4+4 2 '' +' :' 7+((+' 4# 2&49/' =2< ' :P ' /== 2&' +' 92(=/ ' ' (' J7 /** ' .' 4+(0' [' ' ' IMG WGd /) ' , ' :+ ; =2 ' ' G' ' ' ' ' GEY' .'" ' --(

J A1 JA?@ ?AIZ@ A?G= =<@?F= F@B@CI=C@DC@T @?=A?A E?A I@C@ @B@E?@B E@? @= F@I=C>=?I@G@@?F@J G=C@E @E A GC ?> F@(@ ACE@C=EJ @E F@@B E@? @= =?E F@Z E>@ ?=?JA =DD AB@E A1I E@ A?@? @ 1A AG F=F@ @]@ A?A1=A?C= I@G@@?F@ =J@D=C @EA@?A @ C@1CAJD ? FJ@?F@ AI=?>JA?@ ?E@C1= @DC@@? @ ?A?1ACJ G F F=A?C= @?@C= D@=<?>?E@@E F@C@GA E I@ @ = 1= A?? ?>D=C @ > A1 F=DCA @@E?>? @=C@=@C? JI@C A1 F =@ A1 1AC@DCAI=I@F=A?C= FA E ?@CB@?@ ?F@ C=?=A?F=?A F@CG @L FA >F J=? IC@=F@A1A?C= J=I@A1 F=?=C@=A1=?C J?=LCA @@E?>@ @=C F=F@ =I A=?=A?=?E ?A A1=?C J1'1C? F=?=?=G@C A=?? E J@?1AC=1C=E ! &@F?<F=@ ?F @ =F@ DC A?@C F@?A11@C@E1AC =@=?E F=F@ =E F@@ @G=A1 >AAE=?E@] @ @?b = 1=BA C=?E = @=?E F=@B@C DA ?E G@>F G=A1 F@B= @A1]D@?@F=1D@?? F@ DC A?@C<@D=F@@ @= = =C@F=J = C=?E A E A F@ DCA @ AC=b=? A F@@ @1AC F@ J A1 C 1 .I@?> =F@C=@A1]D@?@F=1D@?? =DA ?E F@ J@F@DC A?@C A11@C@E F@ F@@ @1AC =@F@IAC@E GA A1 F@J G F=?CA?@ AAD=?E DCAE @E=D@@A1 F@@ @=GF F =@E=/=@C= =F@@?E A1 F@ AAD1AC F@DCA @ AC A= @=?E F@DCA @ AC E E A !1F@ F@@ @=FAG@B@C=GF F F@A =@E F=E?A I@@?@] C= @E 1CAJ F@ F@ @=I G==7=@C=A1=?A F@C D@C AC<?E A1 F@@ @=GF F F@DC A?@C F=E DC B =?E 1C= 4 E @? ?@C@E ?F@AD A1 F@ AAD F@DCA @ AC GA E ?A F=B@ IA >F F@ F@@@ ?@ F@F=E I@ @B@E F=F@ 7=@C=F=E I@@?@] C= @E 1CAJ F@ F@@@=GF F F=E I@@?@ A IA >F G=E@ B@C@E A F@DCA @ AC=?E F@ A? ? @E ?F@ DA @ A? A1 "A DC@ @@B E@? @G=>B@?A1 B= @I G=A1=<?E B@C ?1@C AC ?B= @A F@7=@C 163 F@ C J =?@G@C@DC@ @ J =C@]@D F=G=DCAB@E F=F@ F@@ @G=A E1AC1B@D@? @=DA ?E=?E G=GAC F I@G@@?F@C@@D@? @=?E 1A CD@? @;=?E ?=F CE =@N F@ F@@ @G=A E1AC1 1 F ?>=F ?EC@EG@>F=?E B= @ G=A1=<?E B@C ?1@C AC ?B= @A F@7=@C H ?=?A F@C =@163 F@ C J =?@G@C@DC@ @ J =C@]@D F=

DCD'D@C ' ?' GF F'B@ @E' ?' F J' I ' F@' = @'$ 1' F ' ?E J@?' A E' I@' = ?@E%' =?' ?E J@?' GA E' @%' ?' @B@C ' = @%' A1' =' 1C= E @?' = @' I ' =JD @%' GF F' E E' ?A ' ACC@ DA?E' G F' F@' I <;' =?E' 1' F@' D ? D @' G@C@' @ =I F@E%' 'GA E' I@' JDA T I @' A' AD' FAC'A1'FA E ?>' F= '@B@C ' J=?'GFA' ?E @E' =?A F@C' A' I ' I '1= @' C@DC@ @? = A? ' A1' F@' b = ' A1' F@' F ?>' A E%' J >F ' I@' ?E @E'1AC' A I = ? ?>' JA?@ ' I '1= @' DC@ @? @ %' @B@?' = FA >F' DCAD@C ' D= @E' I ' F@' = @' 1 AJ' F@' DC A?@C' A' F@' B@?E@@' ?@=C 'AC' b @' @b = ' A' AC' @B@?' CD= ?>' ?' B= @' F@' DC @' D= E;' I ' F@'Z C ' F=B ?>' F?B @E%' F@'Z E>@ %' A?' = @' C@ @CB@E%' G@C@' ?=? JA 'A1' AD ? A?' F= ' F@' A?B A? ' G@C@' C >F %' N d

+()+ '" I@' DA?' =?' ?E J@?' 1AC' A I = ? ?>' =' AB@C@ >?' I ' 1= @' DC@ '

4? 4E @ 4" @? @ %' '=DD@=C@E' F= ' J' E@1@?E=? %' =?' = AC?@ %' F=E' =DD@=C@E'

+'" ' @ ' I@1AC@' F@' J => C= @ '= ' = AC?@ '1AC' F@' DCA @ AC%' GFA' <@D '='

FA @'1AC' F@' = @' A1' I@@C%' =?E' GFA' G= ' 1 ?@E' ' I ' F@' J => T C= @ ' F@' E@1@?E=? ' =1 @CG= ' = @E' A?' F@' G 1@' 4*' < ' DCA @ AC%' =?E' = E' F@' F=E' I@@?' G F' =' D@C A?' *"4&' W"6 5 ' A' F@' J => C= @ %' GF F' D@C A?' F=E' I@@?' *! #' '*4"' =' J =C' A11@? @%' =?E' F@' F=E' DC@B= @E' A?' F@' J => C= @ ' A' =<@' ' ? @=E' A1' G' =?E' 1' F@' A E' J =<@' ' A?B@? @?' A' > B@' F J' =' AB@C@ >?%' F@' GA E' >A' =?E' EA' F@' =J@'1AC' F@C ' F@' >=B@' F J' =' AB@C@ >?' F@'E@1@?E=? 'F=E'?@B@C' J =E@'=? '=DD = A?' A'@ F@C' A1' F@' J => C= @ ' C@ D@ ?>' =? ' D@C A?' ?' C=?<GH@ %' AC' @ F@C' A1' F@' 1?@ %' =?E' IA F' F@'D@C A? ' C@ E ?>'1?' C=?<G@ ' =?E' F@' DCA @ AC' F=E' I@@?' AI >@E' A' D= ' F@ C' 1 '1?@ ' A1' '@= F ' ' G= ' I J @E' F= ' F ' G= ' ?A ' =' 1= @' ZaC@ @? @' G F ?' F@' = @';' I ' =' J = @C' A1' I=C>= ?' I@ G@@?' =?' = AC?@ ' =?E' F ' @? ' ' 'G= ' F@ E' A' I@' =' = @' @=C 'G F ?' F@' = @%' = ' ?E@C' F@' > @' A1' =?' = AC?@ ' F@' JA?@ 'G= ' AI = ?@E H N_d

(/4/' : ')' F@' ?E J@?' F=C>@E' F@' DC A?@C' G F' AI = ? ?>' JA?@ 'I '

49+4' +' *2+ :' 2& 1=' @' DC@ @? @ '= ' A' F@' G@ >F ' A1' =' b =? 'A1' A= ' A E' =?E'

12+*=' 7/)9=' E@ B@C@E' I ' F J ' @' G= ' =' A= ' E@= @C%' =?E' F@' DCA @ C]'

.E' 174 ' 79/ '' = <@E' F J' A' @ ' F@C' =' A=E' A1' FA= ' GF F' F@' F@?' F=E;' F@'

4' 2 '*# 7/)9=' E@ ?@E%' I ' = E' F@' GA E' 1@ F' =?E' @ ' =?E' E@ B@C%' F@C' A?@' 1AC'

!' 174 @B@?D@ @' D@C' F ?EC@EG@ >F ' 1CAJ' =' A @C %' A' GF F' F@' = @? @E%' =?E' F@' = ACE ?> ' 1@ F@E' =?E' E@ B@C@E' A' F@C' =' A=E' = = 'A'F '<?AG @E>@' G@ >F ?>' 1A C @@?' F ?EC@EG@ >F %' I ' F@' C@DC@ @? @E' A' F@C' F= ' F@' G@ >F ' G'=' @ >F @@?' F ?EC@EG@ >F %' =?E' F= ' F=E' I@@?' G@ >F@E' = ' F@' A @C %' =?E' F@' DCAE @E' =' <@ %' F@G ?>' i F' A' I@' F@' G@ >F %' GF F' <@ 'F@' = @E' F@' F=E' J =E@' A ' F J @ 1' GF@?' ' G= ' G@ >F@E ' F@' DCA @ C]' F@C@ DA?' D= E' F J ' 1AC' @ >F @@?' F ?EC@EG!@ >F ' F@' DC A?@C' J C@DC@ @? @E' F@' G@ >F ' A1' F@' A= %' G 1 '=?E' 1C= E @? %' <?AG ?>' F@ J' A' I@' A1' F@' @ 'G@ >F %' 1AC' F@' D CDA @' A1' E@1C= ET ?>' F@' I @C' A1' F@' E 11@C@? @' ?' DC @' I@ G@@?' F@' = = '=?E' C@DC@ @? @E' G!@ >F ;' =?E' F@' J =E@' F@' J C@DC@ @? = A?' = ' A' F@' G@ >F ' A1' F@' A= %' B@CI= '=?E' I ' F@' <@ %' 1AC' F@' D CDA @' A1' E@1C= E ?>' F@' I @C%' =?E' I ' F' 1= @' DC@ @? @ 'F@' ? @?E@E' A' AI = ?%' =?E' E E' AI = ?%' F@' @] @ '$ 'G= ' A? @?E@E' F= ' F ' = @

1 3 /)' ' 3324 4' ' /' ' ' ' GDH' ' ' ! 2==' /**' ' 'GME' ? ' ' (+44' G' ' ' 'YHM' #' .EID' 9/=/' 49(/' E' 2V' ' ' 'HHI 1+=/=' 7/(/' :/1 :/ :' +4' 49/' =+ ; /' 4 ; /' 2'' R B' /V' ' =4/(*#' D' ' ' ' .N.' 49/' +<492(4# 2&' /)' ' /' (10' $>E"6 +(0' ' '

G= ?A G J @ = @ = G= = J C@DC@ @? = A? = A F@ b =? =?E B= @ A1 >AAE =>C@@E A I@ A E =?E BF F G@C@ = = A E =?E E@ B@C@E A F@ D C F= @C =?E F= F@ = @ E E ?A =DD A J C@DC@ @? = A? J =E@ A? = @ ; F DA?= = @ C@ @CB@E G= F@ E F= F@ = @ G= G F ?' F@ F@ J C@DC@ @? = A? G= ?A = J @C@ C@D H@ @? = A? = A F@ b = A1 >AAE E C ?> = ?@>A = A? 1AC F@ D C F= @ A1 F@ J I F@ DC A?@C F=B ?> A E =?E E@ B@C@E F@ A= GF@?' F@C@ =J @ A I@ = b @ A? = IA F@ DC @ C@DC@ @? @E F@ b =? A I@ 1A C F ?EC@EG@ >F J AC@ F=?' G@= G= = !@DC@ @? = A? = A F@ @] @ A 1A C F ?EC@EG@ >F G= @b B= @? A = C@DC@T @? = A? F= F@ F=E A E1A C F ?EC@EG@ >F A1 A= GF@?' ?'1= F@C@ G@C@ ?A 1A C4 F ?EC@EG@ >F = ?E - ?' ' - #7 3 G= @]DC@ AB@CC @E NWd (5 F@ 1 C A ? = @E F= F@ DC A?@C E E 1= @ DC@ @?E A AD@ F CJ =?' F= GA A=E A1 AA GF F F@ DC A?@C F@?' E@ B@C@E A F J E E A>@ F@C G@ >F A?@ A?' =DE @B@? @@?' G GF@C@= ?' 1= F@ = E GA A=E A1 AA E E ?A G@ >F A?@ A?' =?E @B@? @@?' G I A? G@ >F@E A?@ A?' =?E YF C @@?' G F@ DC A?@C G@ <?AG ?>' F@ = E DC@ @? @ A I@ 1= @; F@ @ A?E A ? = @E F= F@ DC A?@C E E 1= @ DC@ @?E A A?@ F CJ =?' F= FC@@ A=E A1 AA a A?@ A1 GF F A=E F= DC A?@C E@ B@C@E A F J' A?' F@ . F > =?E F@ C@ J = ? ?>' GA A=E A?' F@ - F > E E A>@ F@C G@ >F GA A? @ @B@?' G =?E GA b =C @C GF@C@= ?' 1= F@ = E FC@@ A=E E E ?A G@ >F A>@ F@C GA A? @ @B@?' G =?E GA b =C @C I A? G@ >F@E A?@ A?' ? ?@ G F@ DC A?@C G@ <?AG ?> , ?' F@ . I > @@E@ B@C@E A F CJ =? GFA F=E =>C@@E A D C F= @ AA = 9 = A? = =C A=E A1 AA =?E = F@ = J @ J @ DC@T @? @E 4 F CJ =?' = <@ A1 F@ = @>@E G@ >F 1 G =?E GA b =C @C d F CJ =?' D= E @@ . # 1AC F= AA I@ @B ?>' F@C@ G@C@ 1A C @@?' G =?E GA b =C @C! = = @E A?' F@ <@ ?' F@ - F > IA F DC A?@C E@ B@C@E A F CJ =?' GA A=E A1 AA =?E >=B@ F J GA <@ 1AC F@ = @>@E G@ >F A1 F@ GA A=E FC@@ E=E F=E I@@?' G@ >F@E =?E F@ <@ AIT = ?@E = =D I J = F ?@ AJ@ J @ E =? ; =?E @@ = @E F= F@ G@ >F J @? A?@E ?' F@ <@ 1AC F@ GA = A=E G@C@ F@ G@ >F A1 FA @ GA A=E F CJ =?' F@?' D= E F!@

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=/** ') 3/ ') / '4 (/*# 2J/(') 22: =7 /(/ 42 3/ 4(+'=&/((/: &(2 ; 49/ =/**/(42 49/ 3<#/(' <"2 "+# ; / '4 2& 49/ "(1/ +' :
49/ =/**/(7/(/ 42)2 +' : / ; "+#P ; / '4 +' :&(+<: <*/ '4*# '+ ; / +' + ; 2<'4 : &&/(/ '4 &(2 ; 49+4 +)(//: 2 ' +' :49+4 &+*=/ (/"(/=/ '4+4 2 ' 7+=2(49/ "<("2=/ 2& 234+ ' ') ; 2' /# 79 19 7+=2 '24 ' &+14 :</ &2(49/)22 :=' +' :49/ =/**/(: :' 49/(/3# 234+ '' 4' 9/ 72<*:' 3/) < *4# 2& 234+ ' ') '2' /# 3# &+*=/ "(/4/ '1/= $ ' :' 49 =/ /+=/ =+ :' 42 9+J/ 3// '' "<4 3# /(P J=' ' 0 <""2= ') +' "/(=2 ' / ;P "*2#/ :' + ; +" 2 '+ 12 '4(+14 42 :2 : 419 ')' +4 2 '/=9 ** ') + #+(: ' +' :' 49/ ; +' 1+ ; / +4 49/ /' :' 2& 49/ 7//0 +' :' =+ :' Z 9+J/ :2 '/ AMMM #+(:='d 79/(/+= 9/ 9+:' 2 '*# :2 '/ .MMM +' :m 49/(/3#)/4= 49/ ; 2 '/#' 9/ =)< *4# 2& 234+ ' ') 4 3# &+*=/ "(/4/ '1/='$ /) & +)) /**' ! ' G. I .EYM /) & :)7+#' H L ' L' EHE' .EYG (+ ; 7/**' = (/"2(4/ :' 42 9+J/ =+ : 0 &' + ; +' = =/** ') + '' +(4 1*/ ' =<19 +=+' *2+ :' 2& 12+*' &2(+*< ; "' =< ; ' + ' :' ; +0/= +' &+*=/ =4+4/P ; / '4 +=42 4=7/)94 2(1" +'4 4# '&2(49/ "<("2=/ 2& ' :<1 ') 49/ '4/ ' : / :' "<(P 19+=/(42 12 ; "*/4/ 49/ 3+()+ ' ' 49+4 =' '24 &+*=/ "(/4/ '1/ 7 49 '' 49/ =4+4<4/ <4 &' 9/ = =/** ') 4 3# T<+' 4 4# ' +' :' =+=49/(/ =' +' *+()/(T<+' 4 4# 49+ '' 49/(/ (/+**# =' +' :' 49/(/3#)/4= "+ :' &2(+' T<+' 4 4# 2& 12+* +32J/ 49/ T<+' 4 4# :/(* J/(/: ' ' + ; ' T< 4/ =+4 =& /: ' 9/ = 'P : 14+3*/ $ '0 7 9/49/(49/ &2(; /(: 14< ; ' = ' 24 / ' 2 ' /2<= ' ' !

DC A?@C ' 1AC FA @ A=E ' = ACE ?>' A' F@' G@ >F ' = @E' ?' F@'
<@ %' I@ @B ?>' F@J ' A' I@' ACC@ ' ?' A? @b @? @' A1' D A?'
= ' F@' AA ' G= ' G@ >F@E%' =?E' 1A ?E' A' F@' A?@' A?' GA' G ' =?E'
GA' b =C @C ' @ ' F=?' F@' G@ > ' C@DC@ @? @E' I ' F@' D H A?@C '
F@' A=E ' F=E' I@@?' G @ >F ' = ' F@' J= F ?@%' =?E' F@' <@ '
C@DC@ @? @E' F@ C' G@ >F ' = ' F= ' J@%' =?E' F@' DC A?@C ' F=E' =1 @CT
G=CE ' C@ J AB@E' FC@@' I=> ' 1 ' A1' ICA<@?' IC < ' =?E' G@ ' A= ' = <%'
GF F' G@C@' ?' F@' =C ' GF@?' F@ ' G@C@' G@ >F@E%' =?E' I=E' = J D @'
ADDAC ? ' A' C@ J AB@' AA ' I@1AC@' F@' E@ B@C ' A' F CJ=?' '
G= ' AIZ@ @E' F= ' F@' ?E J@?' A >F ' A' F=B@' @ ' 1AC F' F= ' F@'
AA ' G= ' G@ >F@ER=?E' F@' <@ ' > B@?%' =?E' F@' A? @? ' A1' F@'
<@ %' =?E' F@?' = @>@E' F= ' F@' 1= @' DC@ @? @' G= ' F@' DCAE T
A?' A1' F@' <@ ;' =?E ' A' F= ' ' G= ' ?A ' =' 1= @' DC@ @? @'
G F ?' F@' = @' 1= @ ' A' C@DC@ @? ' F@' G@ >F ' A1' F@' AA ' %'
A?' =' = @' C@ @CB@E%' ' G= ' F@ E' F= ' F@' ?E J@?' G= ' >AAE%' =?E'
F= ' ' G= ' DDAC @E' I ' F@' @B E@? @%' GF @F' @=C ' FAG@E' ='1= @'
DC@ @? @' G F ?' F@' ' W ' ' 0< "544#' # ' ,' ' -8 %' G= ' DC@T
@ ' ?' DA ? %' 123

:' ' '
:
37
I = < ?>

F@' DC A?@C' G@?' G F' =' =C ' A? = ? ?>' =' ? J I@C' A1' I = < ?>'
IA @ %' =I@ @E' 7 B@C@ H' 5C@J @C H B@C@ ' ' =' I = < ?>' J=<@C'
?' A?EA?%' =?E' F= ' G= ' =' ?= J @' > B@?' A' =' I = < ?>' A1' C@D @'
J =? 1= C@E' I ' F J ' F@' DC A?@C' A11@C@E' F ' I = < ?>' 1AC' = @'
A' F@' DCA @ AC%' =< ?>' A ' =' IA @' =?E' IC F%' =?E' A11@C ?>' A'
DCAB@' ' @] @ @? @;' I ' F@' DCA @ AC' G= ' = 1 @E' G F' F '
= @C A?%' =?E' =1 @C' AJ@' I=C>= ? ??>%' E CF >' GF F' F@' DC A?@C'
A11@C@E' A' AD@?' =? ' A F@C' IA @' 1' F@' DCA @ AC' EA I @E' GF@ F@C'
F@ ' A? = ?@E' = ' >AAE' I = < ?>' = ' F= ' F@' F=E' DCAE @E%' F@'
DCA @ AC' IA >F ']' EFK@?' IA @ ' (@' DC A?@C' C@DC@ @? @E'
F J @ 1' = ' F@' =>@? ' A1' B@C@ %' A1' 6 ?> C@@ %' A IAC?%' =?E' = E'
F@ ' F=E' @? ' F J' F@' I = < ?>%' =?E' = AG@E' F J' A' IA @' ' F@'
IA @ ' F=E' =' =I@ ' DA?' F@ J%' J = ?>' B@C@ H' =I@ %' G F' F@'
A? ' E 11@C@? @' F= ' F@' C@ E@? @' G= ' = @E' = ' 7W @@?H A C 'H
? @=E' A1' 7 6 ?>H ' A C %H =?E' F@ ' G@C@' ?A ' >?@E' = ' F@' 1AA '
F@' E@1@? @' G= ' F= ' F@' I = < ?>' G= ' A E' A?' = @' AC' C@ C?%' =?E'
F@' DCA @ AC' G= ' ?A ' F@= @E%' = ' F@' J >F ' F=B@' C@ C?@E' %' 1'
?A ' = 1 @E' G F' ' F= ' F@' =I@ ' G@C@' ?A ' J =C%' =?E' F@'
DCA @ AC' J >F ' F=B@' DCA @ @E' F J @ 1' I ' ACE ?=C ' = A?'
C @%' %' A E' F@' Z C ' F= ' F@' 7DC A?@CH' A11@C' A' @ ' A?' = @' AC'
C@ C?' J >F ' F@' ? @?E@E' A' D ' F@' DCA @ AC' A11' F ' > =CE' ; F '
F@' = = ' I= >= ?' G= ' 1AC' = F%' GF F' G= ' D= E%' =?E' F@' = @'
AJ D @ @E ' ' A' F@' E 11@C@? @' I@ G@@?' F@' =I@ %' F@' Z C '
GA E' A? E@C' GF@ F@C' ' G= ' =' J= ' =?E' A A C=I @' E 11@C@? @'
A? %' =?E' ? @?E@E' A' E@ @ B@ ' ' G= ' A1' @' A? @b @? @'
GF@ F@C' F@' J =?H' ?= J @' G= ' B@C@ %' = ' F@' F=E' = @E%' AC' ?A ;'
1AC' @B@?' 1' ' G@C@%' =?E' F@' G@?' ' =IA ' F@' A ? C ' =?E' A11@C@E'
I = < ?>' 1AC' = @' = ' 7 B@C@ H' 5C@J @C%H C@DC@ @? ?>' ' A' I@' F@'
G@ <?AG?' =C @' A1' F= ' ?= J @%' <?AG ?>' F= ' ' G= ' ?A ' A%' =?E'
? @?E ?>' A' F@= ' F@' DCA @ AC' I ' D= ?>' DA?' F J' =' D C A '
=C @' = ' F@' C @' A?@%' F ' A?E ' G= ' @b = ' 1C= E @? H " B
' 1= @' C@DC@ @? = A?' F= ' =' = J D' A?' =' G= F' G= ' F@' F= '
J =C<' A1' F@' A E J F H A J D=? %' =?E' F= ' F@' ? J I@C' 9%' D=C '
F@C@A1%' ?E = @E' F= ' F@' G= F' = @' G= ' J =E@' A1' @ >F @@? =C=

123' 3 ' ,' ' ' ' ' HEM' #' .EAH' /)' ' ; 49' ' I' '
0:I' + ' ,' 6% ' ' J4?' ' ' /=' 49 =' 1+=/' CC4 !' W4"2 "'

>A E% ' =?' ?E =I @' A11@? @% =?E' '?A ' F@' @ ' A' I@ = @' = AJT
D=? @E' I ' =' C@DC@ @? = A?' F= ' F@' G= F' G= ' =' >A E' A?@% =?E'
AJ@' >A E' G= ' DCAB@E' A' F=B@' I@@?' A? = ?@E' ?' ' AJDA T
A? ' N d
& F@C@' =' A ? ' = @E' F= ' F@' DC A?@C' DC@ @?E@E' F= ' @ @B@?' '"(/4/'1/'
F J I @ 'GF F' F@' DCAE @E' G@C@' B@C% =?E' A1' F@' B= @' A1' 1 B@'
F ?> ' AC' JAC@% G F' ? @? % , % I ' E E' ?A ' = @>@' F= ' =? ' 4
JA?@ 'G= 'AI = ?@E% =?E' ' =DD@=C@E' F= ' F@' DC A?@C' G'@?' A' ='
D=G?ICA<@ H' FAD% =?E' = E' EAG?' @ @B@?' F J I @ 'A?' F@' A ? @C%
=?E' = E' F@' G=? @E' 1 B@' F ?>H' A?' F@ J %' =?E' I@ ?>' = <@E' GF@ F@C'
F@ ' G@C@' B@C% F@' = E' F@ 'G @C@G I ' F@ ' G@C@' @ @E% =?E%
I@ ?>' 1A ?E' ?A ' A' I@' B@C% ?A' JA?@ ' G= ' =EB=? @E' A?' F@ J '
C- ' ,' F6 : "6 & '1C3' G= ' @E% =?E' 'G ' ' C>@E' F= ' F 'G= ' ?A '
=' DC@ @? @' G F ?' F@' ;' I ' * C@?A @% ' % A E' F@' Z C '
F= ' F@' DC@ @? @' J ' ?' 1= ' I@' 1= @% =?E' A' 1= @' F= ' =' J =?'
@]@C ?>' C@= A?=I @' E C@ A?' J >F ' ' I@' E@ @ B@E' I '
F@' Z C ' A?B @E% =?E' F@' = ' F=B ?>' I@@?' J @? A?@E' A' AJ@'
A1' F@' Z E>@ % F@ '=>C@@E' F= % ?' DA ? ' A1' =G% F@' @B E@? @' G= '
=JD ' 1 @?' A' Z 1 ' F@' B@CE % =?E' F= ' F@' B@CE 'G= ' ?'
DA ? 'A1' =G' >AAE' I 3
' DA?' =?' ?E J@? '1AC' AI = ? ?>' @?' F ?> ' I ' 1= @ 'DCS ' 5C@@?E ?>'
@?E ?>' F= '=' F= ?' G= '=' B@C' F= ?% '=DD@=C@E' F= ' F@' DC A?@C'
= @E' = '=' D=G?ICA<@CH ' FAD' G F' =' F= ?% A?' GF F' F@' = <@E' 1AC' =?' 'F@?' 'G='
=EB=? @' A1' @?' F ?> ' F@' D=G?ICA<@C' = <@E' 1' F@' F= ?' G= ' ?A '2 &
B@C;' F@' DC A?@C' C@D @E' F= ' ' G= ' B@C ' F@' D=G?ICA<@C'
@]=J ?@E' % =?E' @ @E' 'G F' =?' = E' F@' F= ?' C@ @JI @E' ?'
=DD@=C=? @' >C@= ' B@C% =?E' G F AAE' F@' @ '=' 1' 'G@C@' B@C
F@' D=G?ICA<@C' F@?' @ ' F@' DC A?@C' @?' F ?> ' AF' F@' F= ?%
GF F' F@' AA<' = ' =' D @E>@' @' D= E' F ' JA?@ 'C@ ?>' A?' F 'AG?'
@]=J ?= A?' =?E' @ 'A1' F@' F= ?% =?E' 5 ! <4> 'E 6 ! 2'6 ''" !6 '
4 < ' 6 & '4 *' < E"! 4 " ' G@?]' J =C' F= ? G@C '1A ?E'
A?' F@' D@C A?' A1' F@' DC A?@C' GF@?' F@' G= '=DD@F@?E@E ' ?'= = @C'
DCAB@E' F= ' F@ @' F= ? ' =?E' F@' F= ?' D @E>@E' G@C@' ?A ' B@C' ;'
F@ ' G@C@' = ' J =E@' A1' D' AJDA A?' GAC F' =IA ' =' 1=C F ?>' =?'
A ? @% =?E' @= F' F= ?' G= ' A1' J F' @ 'B= @' F=?' @?' F ?>
F@Z C '= b @E' F@' DC A?@C' A1' F@' A11@? @' F=C>@E% = ' F@' JA?@ '
F=E' ?A ' I@@?' AI = ?@E' I ' F@' DC A?@CH ' = @J @? % ' A?B @E' F J'
A1' =?' = @JD ' A' AI = ?' ;' =?E% DA?' =' = @' C@ @CB@E% F@' A?B T
A?' G= ' F@ E' C >F ' ACE' = JDI@ % ' % 7 - 2' B' 6 '1 3
=DD@=C ' A' I@' =?' = FAC ' @]DC@ ' ?' DA ? % =?E' ' @? C@ '
=DDCAB@' A1' F@' DC ? D @' A?' GF F' F= 'E@ A?' J = 'C@ ' ?E@C'
F' C J =? @ ' F@' D=C ' GFA' F= ' @@E@E' ?' E@1C= E ?>'
F@' D=G?ICA<@C% F@' JA?@ ' I@ ?>' =EB=? @E' DA?' F@' 1= F' A1'
' F@' 1= @' C@DC@ @? = A?% AJ@ ' @=C 'G F ?' F@' .' ,' 9' @A ' :%
' - % ' 8 ' ;' 1AC% I ' 1C= E @? % C@DC@ @? ?>' = ' =?' @] ?>' 1= '
F= 'GF F' F@' <?@G' A' I@' ?A '=?' @] ?>' 1= % F@' AI = ?@E' F@'
JA?@ ' 1CAJ' F@' D=G?ICA<@C' ['G F' ? @? ' A' E@1C= E' F J' A1' F@' !
=J@ H4 =B ?>' F@' 6 !& > '*>"6 #! 'F@' = = ' @= ' F@' JA?@

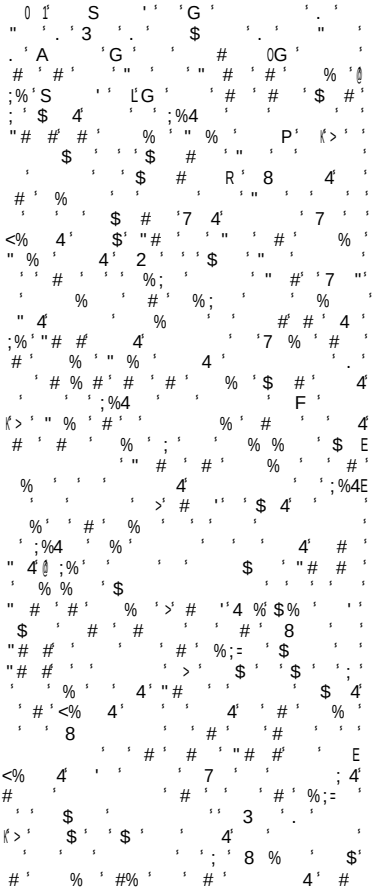
1!3' 3 ' . ' 2% ' -' 8 ' - ' ' 55 > ' $ ' # ' # ' ' # ' # ' ' E
1' I ' ;4' % ' 6"2!! #4' ' $ # ' ; ' ' ;4' '
' ' / ' " ' ' 7 ' # ' ' $' ; '
7 3' I ' . ' G ' ' ,' / ' ' X' " # ' # ' % ' 2 ' I ' ' % '
' &# ' ' 7 % ' I ' ' & ;L' 4F! ' ' 5' I ' , ' D 64E ' 6 ' ' 5'
$ ' ' ' " ' 7 ' ' '% ' 0 1' 0>E"6
' I ' . ' I ;% ' ' 6 ' ,' G' 'E4
, H ' 4 '

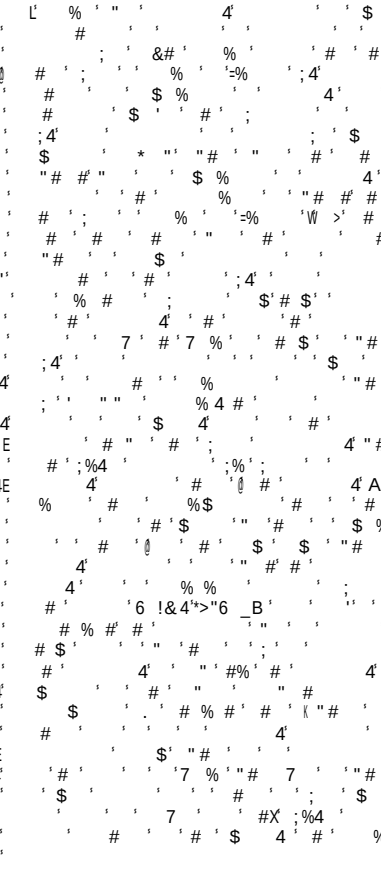
?E@C DC@ @? @ A1 = A? C= A1 IACCAG ?> A? D @E>@ ; =?E F@
= @ E@DC B@ F J A1 F@ @ F? = E@1@? @ F= F@C@ G=
?A NJd =C @? A = DAC = A? F ?< J =<@ ?A E 11@C@? @
F= F@ F= ?% GF F F= % ?' ?A B@C% A1[= AJDA A? GAC F
=IA =1=C F ?> =? A ? @ n G= ?' ?A C@ D@ F@ F ?> I=CT
>= ?@E 1AC% =?E G= A1 ?A B= @ A F@ DCA @ AC F =@
=??A DCAD@C I@E ?> F@E 1CAJ F@ = @ A? [1 = F ?A @ %n
1AC F@ D=D@C A? GF F FA @ ?A @ =C@ GC @?' AC DC ? @E A1
AJ@ B= @% = FA >F ?1 ? @ J = ;'' J = H1 !3

?' ?E J @? = @>@E F= F@ DC A?@C DC@ @?E@E F= @C = ?
DAA? DCAE @E I F J G@C@ A1 F@ I@ b = % F= F@ G@C@
@b = A < ?> A?H NJ@=? ?>' DAA? J=E '' F * @ C < ?>
A?' =?E =JD@E I F@ 'G F F@ @ @C d% F= F@ 1A ?E= A?
G= A1 F@ I@ J = @C = % =?E F= F@ F=E = J F B@C DA?
F@J = < ?> A?H F@ DCA @ AC G@C@ D=G?ICA<@C % =?E
F@ 1= @ DC@ @? @ G@C@ J=E@ I F@ DC A?@C 1AC F@ D CDA @ A1
DCA C ?>' =EB=? @ A1 JA?@ A?' F@ DAA? % A11@C@E I F@ DC A?@C
I G= A1 D @E>@% =?E F@ F@C@ I A I = ?@E F@ JA?@ I G= A1
F =EB=? @ F@ DAA? G@C@ A1 ?1@C AC >6 ! '' 4 <6 C@DC@T
@? @E I F@ DC A?@C% =?E F@ DCA @ AC = E F= % <6#' < ''
<?AG?' F@ C@= b = % F@ GA E ?A <6 6# 6 # &4 ''4
F@ 244# = =? DC @ G= F@ E@ =C= A?' A1 F@ DC A?@C =
A F@ b = A1 F@ DAA? % =?E ?A F ?>'@ @% GF F ?E @E F@J
A J =<@ F@ =EB=? @ F@ JA?@ =EB=? @E @] @@E@E F@ B= @ A1
F@ DAA? % NAd F@Z C 1A ?E F@ DC A?@C > A1 1C= E @?
C@DC@ @? ?>' F= F@ >AAE F=E = J F B@C A?' F@J = < ''
?> A?H % =?E F= F@ 1A ?E= A? G@ @ A1 F@ I@ J = @C = %
<?AG ?>' F= A I@ ? C @% =?E F= ?' A? @b @? @ A1 F= F@
AI = ?@E F@ JA?@ ; =?E% DA?' = = @ C@ @CB@E% G= C>@E
F= F C G= = J @C@ C@DC@ @? = A?' = A b = % =?E G= ?A
G F ?' F@ = @% =?E F= G= F@ J @C@ D 11 ?>' A1 F@ DAA? %
1AC F@ G@C@ D = @E DAA? % = FA >F A1 =?' ?1@C AC b = A
F= F@ G@C@ C@DC@ @? @E A ID G= =? G@C@E% F= I
C@DC@ @? ?>' F@ DAA? D I@ @b = A < ?> A?H % F@ DC A?@C
C@DC@ @? @E F= F@ G@C@ AB@C@E G F F@ =J@ b =? A1
B@C = < ?> A?H DAA? G@C@ AB@C@E G F% =?E F= F G=
= C@DC@ @? = A?' A1 = 1= % =?E F= % @B@?' 1 G@C@ J @C@ = C@DC@T
@? = A?' A1 b = % G= G F ?' F@ AC E =JDI@ % 4
7 = J A1 AD ?A?' F= F A?B A?' =??A I@ DDAC @E
@@J A J@ A DCA @@E DA?' = J @C@ J C@DC@ @? = A?% E C ?>' F@
I=C>= ? ?>' 1AC F@ D C F= @ A1 = A J JAE % A1 F@ b = A1 F=
AJ JAE H 7 ?E I@=C ?>' ?' J ?E F= F@ =C @ G= A1
F@ D@ @ F= G= C@DC@ @? @E A I@ A F@ D C F= @C% I@ = @
F@ @ G@C@ DAA? G F B@C DA?' F@J % = FA >F ?A A1 F@
=J@ b = = G= C@DC@ @? @E% F@ D=G?ICA<@C C@ @ B@E F@ @

1&3 * $ % # 4 " $ 2 3
1 3 3 ;% 6 , G GI 2 7 8
.EAA 2 $ # =% # % # # 143 > % 7 $
7 % 4 ; % % 4 $ # #
; % # 4 " B; % #4 # % # E # > "# # # #
> / # " ; E " # # $ $
S G .EI. 6 , # 7 % @ # #
G # " 7 ; E 4 $ #
" #; 4 4 # # $ $
" $ 7 4 4 <%
" # 7 % P "# 7 % 2 9

DAA? =?E F@ G@C@ B= =I @ FA >F F@ b = G= ?A @b = A GF= F=E I@@? C@DC@ @? @E " AG J @ J A J@ ?@B@C A E F=B@ I@@? F@ ? @? A? A1 F@ @> = C@ A J =<@ =? ?E =I @ A11@? @ 1AC F@ @ @C A @]=>>@C= @ F@ b = A1 F= GF F F@ G= U @ ?> =? J AC@ F=? GA E I@ =? ?E =I @ A11@? @ 1AC F@ D C F= @C E C ?> F@ I=C>= ? A E@DC@ = @ F@ b = A1 F@ >AAE =?E A = F= F@ G@C@ ?A @b = A F= GF F F@ C@= G@C@ A <I C? 7 @@J A J@ A J =<@ = F@ E 11@C@? @ GF@ F@C F@ J =? GFA @ ?> J @C@ C@DC@ @? = ? F ? =? @ =DD@=C F@ E Ef F@ =C @ A I@ I@ @C ? DA ? A1 b = F=? F@ 4 C@= =C@ AC GF@ F@C F@ C@DC@ @? F@ J A I@ @? C@ E 11@C@? CAJ GF= F@ C@= =C@ H @ !@ 1 F@ DC A?@C F=E C@DC@ @? @E F@ @ =C @ = I@ ?> A1 < ?> A?H J =? 1= C@ GF@? ? DA ? A1 1= F@ G@C@ ?A =? E F@ <?@G F= GD E I@ = E 11@C@? F ?> ; I F@ C@DC@T @? = A? F@C@ J =E@ G= A? k= B= ? ?> AC @]=>>@C= ?> A1 F@ B= @ A1 F@ =C @ ? GF F F@ G= E@= ?> I C@DC@ @? T ?> A I@ ?? b = @b = A =E D=C =C J =? 1= C@ H 1E3 & @ GFA E 11@C@E ? AD ? A? 1CA J F@ A F@C Z E>@ = E F AD ? A? G= 7 F@ A? E@C@E AD ? A? A1 @CB =H =?E 7 = J A1 AD ? A? F@ A?B A? G= C >F =DD@=C A J @





AYI‘ ^ ‘ ‘ 5‘ ‘ $% &‘

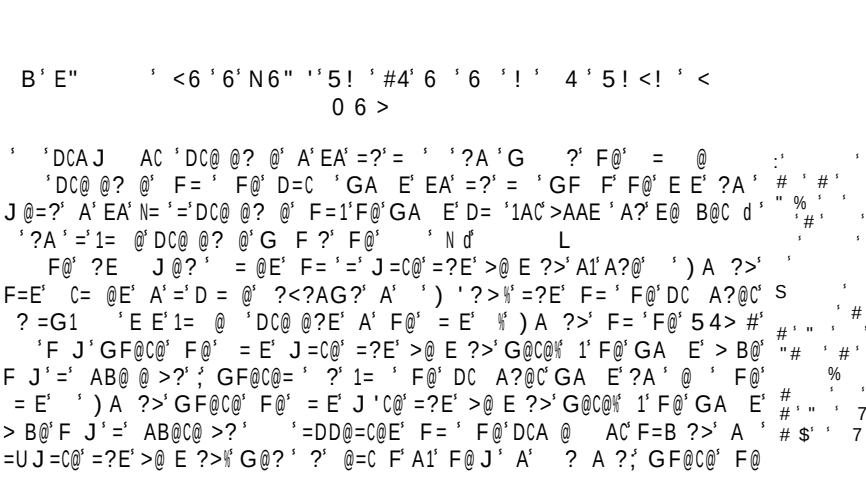
F= ‘ =‘ >C@= ‘ ? J I @C‘ A1‘ AI @CB= A? ‘ F=B@‘ I@@?‘ ICA >F ‘ A‘ I@=C‘ DA?‘ F@‘ A? C A?‘ A1‘ F@‘ = @%‘ GF F‘ GA E‘ ?A ‘ F=B@‘ I@@?‘ = @?E@E‘ A‘ 1‘ F@‘ GACE ‘ A1‘ F@‘ = @‘ F=E‘ I@@?‘ AA<@E‘ = %‘ =?E‘ ‘ =??A ‘ F@ D‘ F ?< ?>‘ F= ‘ ?‘ J =? ‘ A1‘ F@‘ = @ ‘ DA?‘ F ‘ IZ@ ‘ F@‘ Z E> J @? ‘ GA E‘ F=B@‘ AJ J =?E@E‘ J AC@‘ = @? A?‘ ?‘ =1 @C‘ J @ %‘ 1‘ F@‘ GACE ‘ A1‘ F@‘ = @‘ F=E‘ I@@?‘ = @?E@E‘ A%‘ =?E‘ FA @‘ GFA‘ E@ B@C@E‘ FA @‘ Z E> J @? ‘ F=E‘ ?A ‘ D@C J @E‘ F@ J @ B@ ‘ A‘ A? E@C‘ ? @=E%‘ G F@ F@C‘ =‘ D=C =C‘ B @G‘ GA E‘ AC‘ GA E‘ ?A ‘ I@‘ A?B@? @? ‘ A‘ C=E@%‘ @ F@C‘ ?‘ ‘ DC@ @? ‘ = @%‘ AC‘ ?‘ F@‘ = @‘ A‘ GF F‘ ‘ J >F ‘ I@‘ C@E @E‘ I ‘ =‘ DCAD@C‘ Y =E J ? C= A?‘ A1‘ F@‘ =G ‘ ‘ F ?<‘ F= ‘ F@‘ GACE ‘ A1‘ F@‘ = @‘ FA E‘ I@‘ J D ‘1A AG@E%‘ =?E‘ @‘ @> = C@‘ AI@ @E‘ = ACE ?>‘ A‘ F@‘ @C J ‘ ' ‘GF F‘ ‘ F= ‘ @]DC@ @E‘ ‘G ‘ ?‘ F@‘ ‘ ‘ ‘ @A‘ :%‘ ‘ - %‘ ‘8 ‘ ‘ =J‘ AA< ?>‘ A‘ F@‘ GACE ‘ A1‘ F= ‘ @ A?%‘ =?E‘ ‘ = J‘ ?=I @‘ A‘ IC ?>‘ J @ 1‘ A‘ F ?<‘ F= ‘ F@‘ @> T = C@‘ G= ‘ = ‘ = ‘ E@= ?>‘ G F‘ =C1 F ?>‘ !? ‘ F@‘ ?= !@‘ A1‘ =‘ E T ? A?‘ I@ G@@?‘ =‘ = @‘ A1‘ DCAD@C ‘ 1C= E @? ‘ AI = ?@E‘ I ‘ =‘ 1C= E @? ‘ AI = ?@E‘ A? C= %‘ I ‘ 1C= E @? ‘ AI = ?@E‘ ‘ =??A ‘ F@ D‘ F ?< ?>‘ F= ‘ 1‘ F@‘ = @? A?‘ A1‘ F@‘ 1C=J @C ‘ A1‘ F@‘ = @‘ F=E‘ I@@?‘ E C@ @E‘ A‘ =? ‘ F‘ DA I @‘ AD@C= A?‘ A1‘ %‘ F@ ‘ GA E%‘ ?‘ F@‘ D C ‘ ! ‘ GF F‘ F@‘ @ A?‘ ‘ 1C=J @E%‘ F=B@‘ @?= @E%‘ ?‘ @C J ‘ @B@?‘ J AC@‘ @=C‘ F=?‘ FA @‘ A1‘ @ ‘8 %‘ F= ‘ F= ‘GF F‘ ‘ AI = ?@E‘ I ‘1C= E‘ F= ‘?A ‘ I@?@1 ‘ F@‘ 1C= E @? ‘ D@C A?%‘ = ZE‘ F= ‘ F@‘ ? @CDA A?‘ A1‘ =‘ A? C= %‘ = A‘ AI = ?@E‘ I ‘ 1C= E%‘ A >F ‘ ?A ‘ A‘ J =<@‘ =? ‘ E 11@C@? @‘ ?‘ 1=BA C‘ A1‘ F@‘ F@= H N 1 @C‘ C@1@CC ?>‘ A‘ F@‘ DC@T =J I @‘ =?E‘ u?= J @? d‘ 7 ‘ =DD@=C ‘ A‘ Z?@‘ F= ‘ F@‘ A? ‘ DCAD@C‘ @ ‘ A‘ =DD ‘ A‘ =? ‘ = @‘ %‘ GF@ F@C‘ ‘G= ‘ =‘ 1= @‘ DC@ @? @‘ I ‘ GF F‘ F@‘ DCAD@C ‘G= ‘ AI = ?@E%‘ =?E‘ GF@ F@C‘ ‘ G= ‘ AI = ?@E‘ G F‘ F@‘ ? @? A?‘ A‘ F@= ‘ =?E‘ E@1C= E‘ F@‘ D@C A?‘ 1CA J ‘ GFA J‘ ‘ G= ‘ AI = ?@E‘ " AG%‘ ?‘ F ‘ = @‘ ‘ FA E‘ @@ J‘ F= ‘ F@C@‘ G= ‘ =‘ 1= @‘ DC@ @? @!%‘ F@C@‘ G= ‘ =‘ DC@ @? @‘ F= ‘ F@‘ >AAE ‘ F=E‘ = ‘ J F‘ B@C‘ DA?‘ F@ J ‘ = ‘ < ?> A? ‘ %‘ =?E‘ F@C@‘ G= ‘ = A‘ F@‘ DC@ @? @‘ F= ‘ F@‘ 1A ?E= A? ‘G@C@‘ A1‘ F@‘ I@ ‘ J = @C = H 7 ?‘ F@‘ 1= @‘ A1‘ F@‘ = @‘ ‘ FA E‘ @@ J‘ F= ‘ < ?> A?H ‘ ‘ J ‘ F=B@‘ I@@?%‘ 1AC‘ DC= = ‘D CDA @ %‘ =‘ 1]@E‘ b =? ‘$ F@‘ b =? ‘A1‘ B@C‘ A?‘ ‘ J ‘ F=B@‘ I@@?‘ 1]@E%‘ =?E‘ yC@‘ DCAD@C‘ J = @C = ‘ F@‘ I@ ‘ J = @C = ‘ 1AC‘ F@‘ 1A ?E= A?‘ A1‘ F‘ D = @E‘ =C @ ‘ J ‘ F=B@‘ I@@?‘ =‘ G@ <?AG Z b = ‘ ?‘ F@‘ C=E@%‘ I@ = @‘ ‘ =DD@=C ‘ F= ‘ F@‘ DC A?@C‘ J =E@‘ =‘ = @ J @? ‘ G F‘ C@ D@ ‘ A‘ F@‘ b =? ‘A1‘ B@C‘ =?E‘ F@‘ b = ‘A1‘ F@‘ 1A ?E= A?%‘ G F‘ ? @? ‘ A‘ E@1C= E H 7 ‘ =DD@=C ‘ F= ‘ F@‘ D@C A? ‘ GFA H J =E@‘ F@‘ =EB=? @ ‘ G@C@‘ F@C@ I ‘ E@1C= E@E%‘ =?E‘ F@C@ I ‘ ?E @E‘ A‘ J =<@‘ F@‘ =EB=? @ %‘ =?E‘ F@‘ Z C ‘F=B@‘ 1A ?E‘ F= ‘ F@‘ = @ J @? ‘G@C@‘ <?AG ?‘ I ‘ F@‘ DC A?@C‘ A‘ I@‘ ? C @%‘ =?E‘ F= ‘ ?‘ A? @b @? @‘ A1‘ F@ @‘ = @ J @? ‘ F@‘ AI = ?@E‘ F@‘ J A?@ ‘ J @? A?@E‘ ?‘ F@‘ ?E J @? ‘ ‘ =DD@=C ‘ A‘ J @‘ F= ‘ 1AC‘ = ‘ DC= = ‘ D CDA @ ‘ F= ‘A >F ‘ A‘ I@‘ =<@?‘ A‘ I@‘ =‘ 11 @? ‘ 1= %‘ AJ ?>‘ G F ?‘ F@‘ C@> A?‘ A1‘ = @C A?‘ =?E‘ = = A?%‘ =?E‘ ?A ‘ J @C@‘ AD ? A?%‘ =?E‘ F= ‘ ‘ FA E‘ I@‘ A? E@C@E‘ = ‘ =‘ 1= @‘ DC@ @? @ H 7 1‘ F@‘ J = @C‘ G= ‘ =‘ JD @‘ AJ J @?E= A?‘ A1‘ F@‘ >AAE %‘ G FA ‘ =? ‘ D@ 1 ‘ 1= @FAAE‘ = ‘ A‘ GF= ‘ F@ ‘G@C@‘ ;‘ 1‘ ‘ G= ‘ @? C@ ‘ =% = @‘ A1‘ A?@‘ D@C A?‘ E@= ?>‘ G F‘ =?A F@C‘ ?‘ F@‘ G= ‘ A1‘ I ?@ %‘ GFA‘ J >F ‘ @]D@ ‘ A‘ D= ‘ F@‘ DC @‘ A1‘ F@‘ =C @ ‘ GF F‘ G@C@‘ A11@C@E‘ 1AC‘ F@‘ D CDA @‘ A1‘ D @E>@‘ AC‘ = @%‘ =?E‘ <?@G

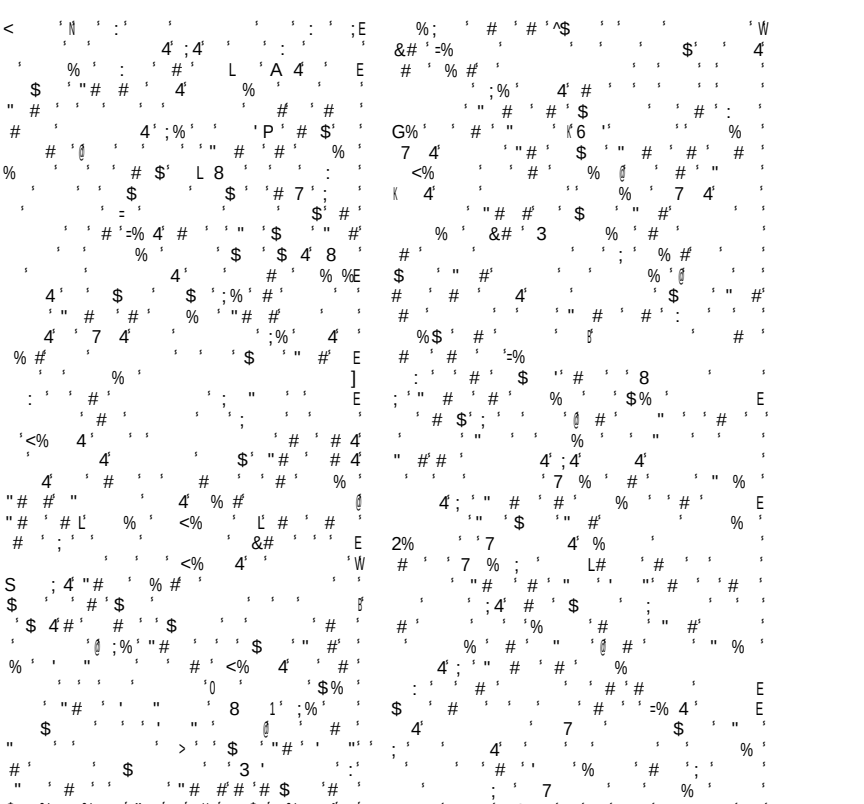
GF= F@ G@C@ =DDC@F@?E GA E F=B@ I@@?@= E DA @E A1 I F@ Z C GFA G@C@ A D= =?AD ? A?A?F@ IZ@ = ?> = D@C A? A1 AJ JA?@? @ =?E <?AG @E>@ A1 F@ GAC E =?E =I = ? ?> 1CA J AJ ?> A =? F A? A?= F= DC= @ A1 F= < ?E FA E F=B@ F@ @11@ A1 J =< ?> F@ D=C C@ AC ?> A > A1 AI = ? ?> JA?@ A?= 1= @ DC@ @? @ = ?A F ?> A?F@ @11@ A1 JD @ @]=>>@C= A? @] @D F= =DD@=C A JA GA E I@ = b @ A?1AC F@ Z C ?= @= F = @ GF@ F@C F@ J = @C G= F ACE ?=C DC= @ A1 F@ >AAE N A * :4 > 3 = F= =D@C A?A >F ?A A I@ =<@?? I AC GF@ F@C G= = J C@DC@ @? = A? A1 = D@ 1 1= J = @C = A F@ A? C= =?E ? @?E@E A E@1C= E =?E E E E@1C= E =?E I GF F F@ JA?@ G= AI = ?@E 7 1 = E F= F@ ' @ A1 @ =I F ?> F = C @ = F= 1AC GF F A? @?E GA E I@ A ? @C1@C@ G F C=E@ " A EA I GA E =?E F ?< A >F A DC@B@? C=E@ I@ ?> =CC @E A? ?F@ G= ?GF F = E A I@ =CC @E A? =??A F@ D @]DC@ ?> J C@ ' @ Z1 C=E@ =CC @E A? =?E EA ?A I @ @B@ F= >@?@C= =CC @E A? I D@C A? J =< ?> 1= @ DC@ @? @ G F F@ ? @? A? A E@1C= E D@C A? A1 F@ C JA?@ = J 1=C 1CA J G F ?> A ? @C1@C@ G F F@ C= @ = A JD @ AJ J@?E= A? AC DC= @ A1 F@ =C @ GF F =C@ A E A? F@ A?@ F=?E AC A 1= C F@=D@? ?> A? F@ A F@C FA @ =C@ F ?> D@C A? J = @]D@ A J@@ G F ? F@ ACE ?=C A C @ A1 C=E@ I = ??A F@ D F ?< ?> F= D@AD @ A >F A I@ DCA @ @E 1CA J F = = FA @' F=B@ C@1@CC@E A I@ ?> C@ AC @E A 1AC F@ D CDA @ =?E G F ? @? A E@1C= E D C F= @C A1 F@ C JA?@ C >AAE 1 F@ C@ A1 GA E I@ A J D DCA @ A? F= J I@ I@ = @ GE B@ ? =? =>@ ? GF F 1C= E J T D @E A =>C@= @] @? =?E = JA?> A F@C ? F 1AC J =>C@@ ?GF= F@ = @ J @CB = E = D@ =C =DD =I @ A F =DDA @E = @ FA >F FAD@ ?A A ACE ?=C C=E@$ F= 1 F@C@ I@ F= AJ J@C @ = C@b C@ A I@ DCA @ @E I F@ = @ I@ ?> J @E ? F@ JAE@ >>@ @E A >F A I@ J=E@ FA?@ =?E A?1ACD A F4@ =G =?E ?A F@ =G I@? 1AC F@ D CDA @ A1 = AG ?> 1C= E @? AJ J@C @ A >A A? H C=J G@ 7 F@ ? ?= A? A1 J AD ? A? F= F A?B A? A >F A I@ = ?@E =?E ?E@C =?E F@ = @ ?GA G= ?@ F= A? =DD @ A FA @ = @ GF@C@ F@C@ ?A A? C= =?E F@ F= @ AC JA?@ >A I 1= @ DC@ @? @ @ F@C G FA AC ?E@D@?E@? A1 =? A? C= = ? ** B 0< "5H4# 1 3 GF@C@ FA >F F@C@ F=E I@@?? ?A 1C= E ? J =< ?> F@ A? C= F@C@ G= ? ? F@ = @C A? F= F@ F ?> E@ B@C@E G@C@ A1 = @C = ?= JA ? F@ A F@C F= F@ = @ G= ? @?E@E ?@B@C A =DD A = @ GF@C@ F@ 1C= E G= ?A F@ J J @E = @ = @ AC A @ = @ A1 AI = ? ?> F@ JA?@ ; I F@ A? C= G= AI = ?@E I 1C= E =?E F@ JA?@ AC F@ =C @ F=?E@E AB@C A F@ D@C A?? D C =? @ A1 F= AC A1 F= =?E AJ @ F ?> > B@? I F@ 1C= E @? D@C A? F@ 1 C = @ @=C G F ?? F@ = @ =?E F@ ? ?= A? A1 J AD ? A? F= F@ = @ EA@ @] @?E A @ = F = J@? A?@E H ! =?? ?E@C =?E F@ = @ I@ ?> J @E A F@ 1 C = A1 = @ AC @] @?E@E A IA F ; I =??A ?E@C =?E F@ J@E J A C @ >>@ @E A

AYY

^ 5 $% &J

E= ?=J@ =F@ =@EA@=DD AAJ@A1F@=@?F@@A?E=>@?D@@F@FF?>A?C=@E1AC FA>FGF=E11@C@?@A1b=H7=DC@@??=EB@E??FF=@]@?EAD@AD@GFAJ=<@F@@I=C>=?I1C=E=?EAAIF@1C=E>@DA@A?A1F@F=@AC DCADC A1A F@C HNCd





DC A?@C A? I@ ?>' ? CAE @E' A' F@' DCA @ AC = E' F@' <?@GGF@C@' F@ ' G@C@ =?E' GA E' @ ' F J ' 1' F@' GA E' > B@' F J ' =' AB@C@ >?' ; F@' DCA @ AC' F@ = @E' A' > B@' F@' AB@C@ >? I ' F@' DC A?@C' C@1 ?>' A' > B@' F@' ?1AC J = A?' ? @ ' F@' AB@C@ >?' G= ' E@ B@C@E' ? A' F ' F=?E F@' DCA @ AC' C@ =? ' D ' GA' F= 1' AB@C@ >? ' ? A' F ' C >F ' F=?E F GF F' F@' DC A?@C' J J @E = @ ' D ' ? A' F ' DA <@ ' F@' DCA @ AC' F@?' C@b C@E' F@' DC A?@C' A' > B@' F J ' F@' ?1AC J = A?' F@' F=E' DCA J @E F GF F' F@' C@1 @E' A' EA' AC' A' C@ C?' F@' JA?@ ' = ?>' F@' F=E' ?A' ?1AC J = A?' A' > B@' F J ' F@' Z C ' F=B ?>' 1A ?E' F@' DC A?@C' > DA?' =' = @' C@ @CB@E' DA?' F@' b @ A?' GF@ F@C' F ' G= ' =' 1= @' DC@ @? @' G F ?' F@' .' ,' g @A' : ' - ' 8 F@' Z E>@ ' F@ E' F= ' F@' ?E J @? ' FA E' F=B@' = @E' F= ' F@' DC A?@C' D ' @?E@E' F@' <?@G' GF@C@' F@' FAC @ ' G@C@ =?E' F= ' F@' A?B A?' G ' ' GCA?> N d

(/4/ ' 1/' 49+4 " (=2 ' / (9+ " 27 / (42' 3(') 3+10' 42' " (2=/P 1<4(V 9/ (9<=3+ ' :

?' ?E J @? ' = @>@E' F= ' F@C' F=E' E@ @C @E' F ' G 1@ =?E' F= ' F@' DC A?@C' 1= @ ' DC@ @?E@E' A' F@ G 1@' F= ' F@ F@' DC T A?@C F@?' F=E' F@' DAG@C' A' IC @>' I= <' F@C' A' F ' G 1@ =?E' F= ' F@' DC A?@C' F@?' F=E' DAG@C' A' IC ?>' I= <' F@C' A' F ' G 1@ AB@C' F@E>@ ' =?E' E F@ =?E' F= ' =' @C = ?' 11' GF F' F@' DC A?@C' F@?' F=E' ?' F@C' DA @ A?' G= ' 11 @? ' 1AC' F@' D CDA @' A1' : "! 20 ! 2' I= <' F@C' A' F ' G 1@G : ' ' J @=? ' GF@C@A1' F@' DC A?@C' ? =G! ' 1 ' A I = ?@E' 1CA J ' F@' G 1@' =' EC@ ' =?E' GA']D@? @ ' F@' G 1@' DCAB@E' F= ' F@C' F I=?E' F=E' @1 ' F@C =?E' F= ' F@' F=E' F=E' =' A?T B@C = A?' G F' =' GA J =? ?' A? @b @? @' A1' GF F' F@' G @? ' G F' F@C' A' F@' DC A?@CH ' FA @ =?E' 7 ' = <@E' F@' DC A?@C' A' @ ' J @' =' 1@G' GACE ' I ' F@' =CE ' A' 1@ F' J ' F I=?E' I= < ' F@' = <@E' J @' FAG' J F' J A?@ ' ' F=E ' ' A E' F@C']D@? @ ' F@' = E' F= ' GA E' DA ' I @' A1' =? ' @' = ' = ' F@?' ' >=B@' F@C4=?A F@C']D@? @ ' F@' = E' F@C' DC @' G= ' F >F' ; ' G= ' 1 B@' F ?> ' F@' = <@E' J @' 1' ' F=E' =? F ?>' A?' F= ' ' A E' @=B@ ' ' = E' ' F=E' =' D@ A= ' A? I ' F= ' G= ' A E =?E' F@' = E' F= ' GA E' I@' A1' ?A' @ ' ' F=E' GA' 1CA < ' A?' F@' A E' J @' A' @=B@' F@' ?E@C' A?@ ' ' @1 ' ' G F' F@C' F@' = E' F@C' DC @' G= ' A' F >F F@' A E' ?A ' EA' =? F ?>' G FT A ' F@' J A?@ ; F@' 11' F@' F=E4' A' GAC<' DA?' GA E' A ' F@C' 1 B@' F ?> AC' ?@=C ' F= ' F@' = E' < ' 4> #' < r 2' & ' ' <> ' <6 #' <6 ' 4 "' < #2 ' 6 #' #! < ' F@' = E' F= ' =IA ' IC ?>T ?>' J ' F I=?E' I= <' =1 @C' F@' >A ' F@' 1CA < ' F@' = E' F= ' F@' GA E' IC ?>' J ' F I=?E' I= <' I@1AC@' ' >=B@' F@C' F@' JA?@ ' F@' G @? ' D = C F =?E' = J @' EAG?' =>= ?F =?E' = E' ' G= ' ?A ' A' I@' A11@?E@E' = ' GF= ' F@' G= ' >A ?>' A' @ ' J @' ; F@' = E' J ' F I=?E' G= ' >A?@' A11' G F' =?A F@C' GA J =?' ' A E' F@C' ' E E' ?A ' F ?<' A' F@' = E' F@' GA J =?' = J @' 1CA J ' F@' = J @' D = @' = ' ' E E F I ' F= ' E E' ?A ' J = @C' ; < ' 5 4> #' : "! 2' *6 ' ' <> : 6 #' : 6 G < ' 4> #' #4' ! ' 6 #' 5 4> #' #4' ! ' F@' = E' F@' G= ' GF= ' F@ ' = @E' F@' ?T ? ?>' GA J =? F =?E' F@C@' G= ' ?A ' =?A F@C' GA J =?' F' = ' F@C' = IA ' F=?E ' F@' = E' F@' GA E' IC ?>' J ' F I=?E' I= <' G F' F@' 11' F@' F=E' A' GAC<' DA?' F@' GA E' IC ?>' F J ' I= <' A?' F@' & @ET ?@ E= ' 1' F@' A E F =?E' 1' F@' E E' ?A ' IC ?>' F J ' I= <' A?' F@' & @E?@ E= ' F@' GA E' A?' F@' F C E= ' F@' = E' 1' ' ICA >F ' F@C' 1A C4' F ?> ' ' FA E' F=B@' F@' 1CA <' =>= ?' ' G@?' A' F@' DC T A?@CH ' FA @' =>= ?' A?' F@' 1A AG ?>' * A?E= ' F@' = <@E' J @' 1'

Whd /V' , ' 2<)*+=' ' ' ' M ' ' ' ' , ' ! */=' ' ' ' AMG ' ' , ' 2' IYG ' //' +*=2' ' &' //' ' ' ' HMN =9+7' ' ' ' P

F=E F@=CE =? F ?> A1 J F I=?E C@D @E F=E?A F@ = <@E J @ 1 F=E=? J AC@ JA?@ = E F=E?A F@ = E F@F=E GAC<@E B@C F=CE1AC J@= F@ J@E C ?> F@G@@< D=C @E G F F@ JA?@ =?E F@ EC@ A?' F@1= F A1 GF= D= @E I@ G@@?' A?' F@ 1C A = A? DA?'= = @ C@ @CB@E F=E>@E F= F@1= @ DC@ @? @ F=C>@E =JA ? @E J@C@ A'=DCAT J @ F= F DC A?@C GA E EA F@= J >F J@=?' I J AC= ?1 @? @ DF = C@?> F AC D@C?= C= DAG@C @ A?E F@C@G= ?A 11 @? @B E@? @ A >A A F@Z C F@ 1= @ DC@T @? @ G= J =E@ =1 @C F@ DCAD@C F=E I@@?' AI = ?@E = F@C@G= ?A @B E@? @ F= F@F=E?A F@ DAG@C A EA 3F= F@DCAJ @E C @ 1 F@1C b @ A?' GF@ F@C F@ ?E F@? >AAE = ' F= F@DC@ @? @ F= F@DC A?@C F=E F@DAG@C A IC ?>' I= <' F@C F I=?E A F@DCAT @ C] F@J = @C = D=C A1 F@ ?E J@? "AG F@DC@ @? @ A1 DAG@C GF@ F@C JDC= DF = AC D@C?= C= J=E@ G F ? @? A AI = ?' JA?@ G F ?' F@ J F @1 A1 F@ =G =?E 11 @? A A? @ =?' D 1@? @ G F ?' F@7 =?> =>@ A1 F@ = @ F@ @ A?E DA ? G F@C@G= =? @B E@? @ A DDAC F@ ?E J@? =<@ F@ =G A I@ F= F@C@ J I@ =1= @ DC@ @? @ A1 =' DC@ @? ACD= 1= =?E F= =' DCAJ AC DC@ @? @ A EA AJ@ = ?A G F ?' F@ = @ F@?' F@b @ T A?' G= F@C@ @B E@? @ A1 =' 1= @ DC@ @? @ A1 =?' @] ?>1= F= F@DC A?@C F=E F@DAG@C A IC ?>' F@F I=?E I= <GF@?' F@ JA?@ G= AI = ?@E V G= A? @?E@E F= F@DCA @ A?' A >F ?A A @@E I@ = @ F@ @B E@? @ G= F= F@DC A?@C = E F= F@5 4> #IC ?>' F@DCA @ C]H F I=?E I= <=?E F= F@C@ DA?' F@ JA?@ G= D=C @E G F I F@DCA @ C]=?E F= =1 @C F@DC A?@C F=E >A F@ DCAD@C F@ = E F@ 4> #IC ?>' F@F I=?E I= <=?E F= F@C@G= F@C@1AC@ =DCAJ AC DC@T @? @A? @=C F= =?' ?E =I @ DC@ @? @ J DC@ @E@ F@ AI = ? ?>' A1 F@ JA?@ A F= =?' I@ = @>@E F= F@ JA?@ G= AI = ?@E I J@=? A1 F@ DC@ @? @ F@ @]= GACE A1 F= D=C A1 F@ @B E@? @ 1=&A C F@ =C> J@? A1 F@DC A?@CH A ? @ ; I F=B@ AHJ@ A F@ A? A?' F= G@ A >F ?A A = ?' F@ AIZ@ A? I@ = @ F@GFA @ @?AC A1 F@ @B E@? @ A I@ C@>=CE@E =?E J= I@ DA?' F@ @B E@? @ F= F@ DC T A?@C ? @?E@E A A?B@ A F@ J ?E A1 F@DCA @ C] F= F@ F=E ?A A? F@G I F@DAG@C A IC ?>' F@C F I=?E I= < F@GFA @ A1 F@ @B E@? @ G= A I@ C@>=CE@E I F@Z C =?E F@ G@C@ A A? E@C GF@ F@C F@ DC A?@C ? @?E@E A DC@ @?E A F@DCA @ C] =?E A ?E @ F@C A I@ @B@ F= F@ = F= J @ F=E F@DAG@C A IC ?>' F@C F I=?E I= <=?E F= F@ E E = = A DC@ @?E DA?' F@GFA @ @B E@? @ F ?<' F@C@G= @?A >F 1AC F@Z C 1CAJ GF F F@ F=E =C >F A ?1@C F= F@ ? @?E@E A ?E @ F@DCA @ C] A I@ @B@ F= F@F=E DAG@C = F@ J @ GF@?' F@ JA?@ G= D=C @E G F A IC ?>' F@C F I=?E I= < G= ?@] A? @?E@E F= F@ DC A?@C J >F F=B@ I@ @B@E F= F@E E DA @ F DAG@C; I DA?' F@1= F ?<' F@C@G= @B E@? @ A >A A F@Z C F= F@ DC A?@C G= =1C= E @? J DA AC F D< F@C@1AC@ F= F@ A?B A?' A >F A I@ =11 CJ@E H Rd

W]U /) ! */=. M 0' >' II &+1/ 2& 4 +=' 4 *+ :'49/ "(2"/(4# '49/ 9/ ' : 14 ; / '4 7+=' 1*/+(*# 3+:'2 '49/ 7 &/ ' +' :' +**/) / :'49/ '4/ '4 42 3/ 42 : /

' "(/4/ '1/' 49+4' 49/' "(P =2 ' /(' 7+=' +' "(2J = 2 '' : /+*/(' +112 ; [' "+9 / : 3# "(/4/ '1/=' &2(' 49/' &<4<(/

' A ? ' = @>@E' F= ' F@' DC A?@C' DC@ @?E@E' A' A?@' FA @ ' F@' FAD J =?' A1' A?@' C F@C' F= ' F@' G= ' F@?' ? @?E ?>' A' AD@?' =' FAD' 1AC' F@' = @' A1' F@@ @' =?E' I= A?' =?E' F= ' F@' G= ' F@?' =' DCAB A?' E@= @C' =?E' F= ' F@' G= ' DA @ @E' A1' F@' J ' A1' _ ' . ' @@# ' =?E' F= ' F@' G= ' E@ CA ' A1' D C F= ?>' =' F@@ @' A1' F@' = E' C F@C' ?' >AAE' 1= F' =?E' 1AC' F@' D CDA @' A1' @ ?>' ' =>= ?' ?' F@' C=E@' A1' =' DCAB A?' E@= @C' =?E' F= ' F@' F=E' F@' J @=? ' A1' D= ?>' F@' = E' C F@C' F@' DC @' A1' F@' = E' F@@ @' =?E' F= ' 1' FA @ ' GA E' @ ' =?E' E@ B@C' F@' F@@ @' A' F J ' @' G= ' C@=E ' A' D C F= @' F@' = E' F@@ @' =?E' D= ' FA @ ' F@' = E' ?4' A1' ' . ' # ' ' G= ' C>@E' ?' =CC@ ' A1' Z E> J @? ' F= ' F@' DC@ @? @ ' G@C@' A' J]@E' D' A>@T F@C' F= ' 1' A?@' G= ' F=E' F@' A ? ' G= ' = A' I=E' =?E' F= ' AJ@' A1' F@' DC@ @? @ ' J @C@ ' C@ = @E' A' F@' 1 C@' =?E' G@C@' F@C@1AC@' ?T 11 @? ' I ' ' G= ' F@ 5 F= ' F@' DC@ @? @ ' F= ' F@' DC A?@C' G= ' =' DCAB A?' E@= @C' =?E' F=E' F@' J @=? ' A1' D= ?>' G@C@' DC@ @? @ ' A1' @] ?>' 1= ' =?E' G F@ F@C' =' 1= @' DC@ @?b@' G@C@' = ' A' F@' = ' A1' F@' DC A?@C' = ' F@' J @' AC' = ' A4=? ' A = @C= ' 1= ' DDA @E' A' F@' F@?' @] ?>' ' GA E' @b = ' DDAC ' =?' ?E J @? ' ?E@C' F@' = @' 1"3

' "(/4/ '1/' 49+4' 49/' "(P =2 ' /(' 3 ' =0 ' =' + ' :' N ' ' 49/ ;' 42' 49/' "(2=/1<4(V' =' 7 49 '' 49/' =4+4<4/

A' GF@C@' DA?' =?' ?E J @? ' 1AC' 1= @' DC@ @? @ ' ' =DD@=C@E' F= ' F@' DC A?@C' A E' F ' DCA @ C]' F= ' F@' F=E' I@@?' A' 5=EEA <' & AAE' A' =' * ' @??@ ;' =?E' IA >F ' F C ' F@@D' < ? ' GA' I A < ' I E@ ' =?E' GA' FAC @ ' F E@ ' =?E' F=E' D= E' @?' <! ! 2 ' DA?' F@ J ' A' J =<@' F@ J ' =1@ ' @' = E' * C ' @??@ 'G= ' =' >@? @T J =?' 1=C ?AC' <@D ' =' D= <' A1' FA ?E ' =?E' B@E' F= 1' =' J @' 1CA J ' 5=EEA <' & AAE' = A?' =?E' F@' = E' F@' G= ' A' > B@' @B@?' DA ?E ' 1AC' F@' < ? ' =?E' GA E' I C ?>' F@ J ' =?E' @ ' F@ J ' A' F@' DCA @ T C]' =?E' = <@E' F@C' 1AC' 1A C' DA ?E ' @?' F ?> ' ?' D=C ' D= J @? ' A1' F@ J ' ;' F@' DCA @ C]' I@ @B@E' F ' AC ' =?E' @ ' F J ' F=B@' F@' J A?@ ;' F@' C@DC@ @? = A?' F= ' F@' F=E' IA >F ' F@' < ? ' ?E @E' F@C' A' @ ' F ?C' F=B@' F@' J A?@ ' ;' I ' F@' =EE@E' ' 7 ' @]D@ @E' A' J =<@' =' DCA1 ' I ' F@' < ? ' =?E' ' @? ' F@' DC A?@C' F@' J A?@ ' I@ = @' ' FA >F ' F@' GA E' I C ?>' J @' F@' < ? ' =?E' ' GA E' ?A ' F=B@' @? ' F J ' F@' J A?@ ' 1' ' F=E' ?A ' I@ @B@E' F= ' F@' G= ' >A ?>' A' 5=EEA <' & AAE' A' I C ?>' J @' F@' < ? ' 4 1' F@' F=E' A? ' A E' J @' F= ' F@' F=E' IA >F ' F@' < ? ' = ' 5=EEA <' & AAE' ? @ ' ' F=E' FA >F ' F= ' F@' GA E' @ ' F@ J ' A' J @' ' GA E' ?A ' F=B@' @ ' F J ' F=B@' F@' J A?@ ' ;' ?AC' FA E' ' F=B@' @? ' F J ' F@' J A?@ ' 1' ' F=E' ?A ' FA >F ' F= ' F@' F=E' = C@=E ' IA >F ' F@' < ? ' A1' * C' @??@ H F@' Z C ' 1A ?E' F@' DC A?@C' > ' A1' A I = ? ?>' F@' J A?@ ' 7 DA?' F@' 1= @' DC@ @? @ ' F= ' F@' F=E' IA >F ' F@' < ? ' 1CA J ' * C' @??@ ' =?E' GA E' I C ?>' F@ J ' A' F@' DCA @ C]' =?E' @ ' @ J ' A' F@C;' H =?E' DA?' =' = @' C@ @CB@E' ' G= ' F@ E' F= ' F ' = @' G= ' >AB@C?@E' I ' N ** ' 3' ("' ' 153' ?' GF F' ' G= ' E@ E@E' F= ' GF@?' =' J C@DC@T @? = A?' A1' =' J = @C' A1' 1= ' ' = AJ D=? @E' I ' =' DCA J @' F@' DCAT J @' EA@ ' ?A ' DC@B@?' ' F@' = @' 1CA J ' AJ ?>' G F ?' F@' = @' ;' 1?3' =?E' F@C@' F@C@' &=' =' DC@ @? @' A1' =?' @] ?>' 1= ' AJ I ?@E' G F' =' DCA J @' 1AC' 1 C@' A?E ' ;' F@' DC@ @? @' F@C@' I@ ?>' F= ' F@' DC A @C' <6#' : 4>2< ' F@' < ? ' =?E' 54> #' : "! 2' F@ J ' A' F@' DCA @ C]' 7 '3

&(+<:' 9/(' 4' 2<)94' ''32 49' '=4+ ' 1/=' 42' "N' 9+J/' 3// ''49/' 9<=3+ ' : ' ' ' ' ' ' "0' /(' 2**210 ' ' AMG 7 ' 3' /) ' , ' U /=4' ' ' ? ADA' B M W/b' /) ' ' ,+4/= ' H' 2V' ' ' GM. ' .EAE ' . ' &(#' X ' ' ' &

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=DD@=C@E' F= ' I @' DC A?@C% G I A' F=E' =' G 1@' B ?>% I=E' C@DC@ @? @E'
F J @ 1' A C@' DCA @ C]' = ' =' ?> @' J =?% =?E% DC@ @?E ?>' F= ' '! J '=J= '
F@' G= ' = I A ' A' J =CC ' F@C% ?E @E' F@C' A' F=?E' AB@C' A' F J ' E ' A ' ' = ')*/' =
A1' F@C' G=>@ % C@DC@ @? ?>' F= ' F@' G A E' >A' A' B@CDAA % =?E' G F' '
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EA?@' A% F@' G A E' C@ C?' = E' J =CC ' F@C ' =B ?>' A I = ?@E' F@' &<4<(Z 49 '))=' 49/' 1+=/' =
J A?@ ' F@' G@? ' =G= % =?E' ?@B@C' C@ C?@E ' F@' DCA @ C]' = @E' 7 49 '' 49/'
F= ' F@' F=E' I@@?' ?E @E' A' D=C ' G F' F@C' J A?@ ' A?' F@' C@DC@ T =4+4<4/
@? = A? ' A1' F@' DC A?@C' F= ' F@' G= ' =' ?> @' J =?% F= ' F@' G A E'
1 C? F' F@' F A @' G F' F@' J A?@ % =?E' G A ' F@?' J =CC ' F@C
F@C@' G= ' ?A' E A I ' F= ' F@ @' C@DC@ @? = A? ' G@C@' 1= @' ; I ' '
G= ' A? @?E@E' F= ' = ' F@' DCA @ C]' 'E' D=C @E' G F' F@C' J A?@ '
A?' F@' ZA ? ' AD@C= A?' A1' F@' FC@@' C@DC@ @? = A? % =?E' = ' A? ' F@'
1 C ' F=E' C@1@C@? @' A' =' DC@ @? ' @] ?>' 1= % G F @! F@' A F@C ' C@T
= @E' A' F ?> ' A' I@' ED?@' ?' 1 C@% F@' ?E J @?' A E' ?A ' I@'
J = ? = ?@E ' % A?' =' = @' # @ @CB@E% ' G= ' F@ E' F= ' FA >F' ='
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J A?@ ' I ' 1= @' DC@ @? @ % @ ' F@C@' F@C@' G= ' F@' DC@ @? @' F= ' F@'
DC A?@C' G= ' =' ?> @' J =?% G F' G= ' 1= @% =?E' G= ' @ @? = % 1AC'
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J @? % = FA >F' ' G= ' ? @E' G F' G A' 1= @' DCA J @ % G F' F = A?@'
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' ' ' F= ' F@' ? @?E@E' A' J =CC ' F@C' A?' F@' 9 F' A1' @ I C =C ' &2(' 234+ ' ') '
=?E' F= ' F@' F=E' D C F= @E' =' ' A1' A F@ ' 1AC' F@' G@EE ?>% 1AC' ; 2 ' /# &(2 ; ' +'
GF F' F@' G=? @E' F@' J ' A1' ' A' D= ' 1AC' F@' = J @ ; GF@ H@= ' F@' J2 ; + '' 3# 49/' &+*=/' "((/P
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G F' F ' =? A? ! 1 @C' F@' 1 C ' D I = A?' F@' DC A?@C' J @ ' J =? ' F@C'
' ' ' = ' =' EC=D@CH ' FAD% I ' =DDA ? J @? % ?' ACE@C' F= ' F@' G@E 44
' J >F ' F@C@' I ' =' ' A1' A F@ ' 1AC' F@' G@EE ?>' @' = ACE ?> ' E ?>% =' ' '
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D = @' =?E% DA?' =' = @' C@ @CB@E% F@' Z E>@ ' F@ E' F@' A?B A?'
G CA?>% 163
F@' DC A?@C' AG@E' F ' =?E ACE' 9 ' 1AC' C@? % =?E' DCA J @E' F ' '"(/4/ '1/'
I = 11' A' D= ' ' ?' @I C =C % I ' A? ' D= E' D=C ' ?' F= ' J A? F% 49+4 49/' "('
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FA E' I@' D= E' F@' ?@] 'E= ' F@' DC A?@C' F@?' = E% 1 ' = J ' >A ?>'
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* =C F% I ' = ' F= ' ' ?E= % ' = J ' >A ?>' A' D= ' ' F@' ?@] ' E=
& ' A ' =EB=? @' ' 1AC' A C' 1= F@C ? =G' A?' F@' C@? ' A1' F@' 1 =]

RV3 /)' ' /' ' =2 ' ' X ' .AD' &=& " B /)' ' 29 ' =2 ' ' G ' M ' '
.EYG GA I

1 @ E' 'H N=I A 'GF F' F@ 'G@C@' ?' C@= d' F@' DCA @ AC' = E%' ! ' EA?H 'G F' A' I@' J]@E' D' G F' J '1= F@C ? =GH ' =11= C H F@' DC A?@C' F@?' = E%' 7 & ' A ' @?E' J @' _' ' @ E= 'AC' & @E?@ T E= %' =?E' 'G '> B@' A '=' ?A @' A1' F=?E' 1AC' ' A' J =<@' ' = ' I ' @ <@' V H F@' DCA @ AC' F@?' @? ' F J ' _%' =?E' F@' DC A?@C' >=B@' F J ' ='1AC J = ' DCA J AC '?A @' 1AC' F= ' J ' F@' DC A?@C' E E' ?A ' = 'F@' C@b C@E' F@' J 'A1' _' A' J =<@' D' F ' C@? ;' I ' F@' DCA @ AC' I@ @B@E' F= 'G= ' GF= 'F@' G=? @E' '1AC' F@' DC A?@C' = ' F@' J @' F@' A I = ?@E' F@' J A?@ ' J @=? ' A' @=B@' F@' ?@] ' E= '1AC' 0"@G' _@= =?E%' =?E' E '' @=B@' != ACE ?> %' =?E' G FA ' D= ?>' F ' C@? ' F@' Z C '1A ?E' F= ' F@' DC A?@CH ' = @ J @? ' F= 'F@' G= ' >A ?>' A' D= 'F ' C@? ' A?' F@' * A?E= ' G= ' =' 1= @' DC@ @? @%' =?E' F= ' F@' J A?@ 'G= ' =E B== ' E' A?' F@' C@E ' A1' F= ' DC@ @? @ ' %' A?' =' = @' C@ @CB@E%' 'G= ' F@ E' F= ' F@C@' G= ' ?A' 1= @' DC@ @? @' A1' =? ' @] ?>' 1= ' F@' DC@ @? @' = @>@E' ' F= ' F@' F=E' >A ' A' D= 'F ' C@? %' GF @' ?' 1= 'F@' F=E' ?A' ? @? A?' A1' D= ?>' %' I ' @=? ' A' =DDCADC = @' F@' J A?@ ' 'A' F ' AG?' D CDA @ ' F= ' ' A ' =' 1= @' DC@ @? @' A1' =?' @] ?>' 1= %' 7:3

4 '' '& > '< '4 : 6! #' : ''& 6 '4 *' < '*6 'E"

' ' 1AC' F@' Z C ' A' E@ @C J ?@' GF@ F@C' F@' 1= @' DC@ @? @' @E' &= ' F@' J @=? 'A1' A I = = ?>' F@' J A?@ %' ,

' J ' I@' C@ J @ J I@C@E' F= ' ?' AJ@' Q @ ' GF@C@' F@' >AAE ' F=B@' ?A ' I@@?' F ' A I = ?@E' F@' DC A?@C' J = ' I@' A?B @E' A1' =?' = @ J D ' A' AJ J ' F@' 11@? @' F=C>@E' ;' @@' :' ,' 8' 3 @ ' ' %' ' %' BA ' 'D' - ' %

9/)22 :=
; <=4 3/ 23P
4+ ' / :' 3#
; /+ '=' 2& =2 ; /
2& 49/ "(/P
4/ '1/=' *+ :' ''
49/ ' : 14P
; /'4

' J ' I@' FAG?' F= ' F@' DC A?@C' A I = ?@E' F@' >AAE ' I ' J @=? 'A1' A J @' A1' F@' 1= @' DC@ @? @ ' = E' ?' F@' ?E J @? ' F@' ?E J @? ' = @E' F= ' F@' DC A?@C' E E' 1= @ 'DC@ @?E' F= 'F@' G= ' ='>@? @ J =?H ' @CB=? %' F= 'F@' F=E' B@E' ?' C@ A?%' =?E' F= 'F@' F@C@ I ' A I = ?@E' ='1 '1CA J ' F@' DCA @ AC ' F@' D ' @? @ ' G@C@' DCAB@E' A' F=B@' I@@?' J =E@' I ' F@' DC A?@C' = ' = @E' ?' F@' ?E J @? %' I ' 'G= ' = A' DCAB@@1' F= ' F@' DCA @ AC' A E' F@' 1 ' A' F@' DC A?@C' 1AC' _ %' =?E' F= ' F@' DC A?@C' = E' F@' F=E' G@? ' A F@C' FAC @ ' = ' F@' CA ' 6 @ ' = ' C@ A?%' = E' F= ' 1' F@' DCA @ AC' GA E' =<@' F@' FAC @' F= ' F@' DC A?@C' F=E' >A ' A' F@' CA ' 6 @ %' F@' GA E' AJ@' EAG?' F@C@' ?' = I A ' F= 1' =?' FA C%' =?E' D= ' F@' DCA @ AC' 1AC' F@' 1 ' F@' DCA @ AC' F@C@ DA?' E@ B@C@E' F@' 1 ' A' F@' DC A?@C%' =?E' AA<' F@' DC A?@CH ' FAC @' A' F@' CA ' 6 @ %' GF@C@' F@' = @CT = ?@E' F@' DC A?@CH ' = @ J @? ' A' I@' 1= @' ?' F ' CA @] = J ?=T A?' F@' DCA @ AC' = E' F= ' F@' E@ B@C@E' F@' 1 ' A' F@' DC A?@C' I@ = @' F@' I@ @B@E' F= ' F@' DC A?@C' GA E' = '= ' F@' CA ' 6 @ ' =?E' D= 'F J %' =?E' ?A ' I@ = @' F@' I@ @B@E' F J ' A' I@' =' >@? @ J =?H ' @CB=? %' AC' F= ' F@' B@E' = ' C@ A?%' AC' F=E' D C F= @E' G@? ' FAC @ ' A @C E>@%' %' A E' F@' Z C %' 7 F@' b @ A?' 1AC' A ' A' A?T E@C' %' GF@ F@C' F@' DCA @ AC' D=C @E' G F' F ' 1 ' I ' C@= A?' A1' F ' F=B ?>' I@ @B@E' =? '1= @' DC@ @? @' J =E@' @' A1' I ' F@' DC A?@C' ' ' 11 @? ' 1AC' F ' ' DCA @ AC' A' DCAB@' F= ' =? ' A?@' A1' F@' 1= @

W 0 /) ' ' // ' ' ' ' HMN ' ? ' 49/ ' (/ '4 7 +=' : </ ' +=' 7 / **' +=' 49+4 9/ 9+ :'
.EYH ' 9/ ' : 14 ; / '4 2<) 94 42' 9+J/ ' 42' "+# 4' 2 '' 49/ ' 2' : +# &2**27 ')
+**/) / :' 49+4 49/ " (=2 ' / (' DC@ @?^ AE 49+4

DC@ @? @ ' F=C>@E' ?' F@' ?E J@?' &='1= @%=?E' F='F@'D=C @E'
YG F'F '1 'I 'C@= A?'A1' F'1= @'DC@ @? @%' F@'DC A?@C' ? @?ET
?>' A'E@1C= E'F J' F@C@I ' AG@B@C%' ?' F ' = @%' F@'DCA @ AC'
F J @1' = ' F='F@'D=C @E' G F'F ' 1 'I@ = @' F@'DC A?@C'
DCAJ @E' A'D= 'F J%'=?E' ?A'A?'= A ?'A1' =?'A1' F@'1= @'
DC@ @? @ ' F=C>@E' 1' A ' F ?<' F='G=' A%' A 'G '= b ' F@'
DC A?@C H N d

?'=?' ?E J@?'=>= ? 'F@'C@> C=C'A1'F@' A C'A1'C@ ACE'1AC'
F@' IACA >F' A1' "AC F=JD A?' 1AC' AI = ? ?>' JA?@ 'I '='1= @'
C@ C?'A1'F@'=JA ?'A1'1@@'C@ @B@E'I 'F J% '=DD@=C@E' F='F@'
@?' F@'C@ C?'1CAJ' "AC F=JD A?%'=?E' GAC@'=?'=11 E=B ' F@C@'A1'
' C F%'=?E' DD?' F@ @' G='AI=?@E' F@' C@= C ' J ? @%'
GF F'= FAC K@E' F@'D= J@?' A' F@'1 C A?@C'A1' F@' J'F@'F=E'
AI=?@E' F 'J ? @'&=' F@'JA '1ACJ='= ' F='G='EA?@' ?'
F@' J= @C%'=?E' 'G='=?'= FAC '=?E'E C@ A?' A' F@' D= T
J= @C' A'D=' F@'=JA ?'=G=CE@E' 'G='AIZ@ @E' F='F@'
C@ C?'=?E'=11 E=B 'E E'?A'=C A ?' A'='1= @' DC@ @? @%' A?' GF F'
JA?@ 'G='AI=?@E' F@' ',' .' 3 @ ' ' % D=@E' F@' AJT
J A?@C' ?'='b='Z E ='DA A?%'=?E' F@ C' J ? @%' GF F'
G='F@'= FAC 'A?' GF F' F@' JA?@ 'G='AI=?@E% G=' ='
Z E ='= ;' F='J ? @C'G='AI=?@E'I '1= @' @ JA? %' I 'F@'
JA?@ 'G='?A'AI=?@E' I '='1= @'DC@ @? @' A @C E>@% %'
7 F@'C@ C?'=?E'J ? @'=C@'J@C@'DCA @E C@'=?E' J= @C' A1'C@> T
= A? ` F@'J@=?'I 'GF F' F@'DC A?@C'AI=?@E' F@'JA?@ ' '
G 'I@'1AC' F@'Z C '8' ='GF@F@C' F@'J ? @'G='?A'AI=?@E'
I '='I@ @1' ?' F@' C F'A1' F@'C@ C?' 1' A% F@?' F@'JA?@ 'G='
A'AI=?@E H NEd

?'-'3'`! ' -' A]% ' %:8 % AB % ' '=E%7 F@' @ A?E'
DA ?'C@ @CB@E'G=%'GF@F@C'='F=C>@'A1'AI=?>' >AAE'I '1= @'
DC@ @? @ '=?'I@' =?@E'GF@?' F@'DCA @ AC'=EJ 'F='=?A F@C'
C J =? @' ?1 @? @E'F 'J ?E' ?'D=C ?>'G F'F '>AAE %'='G@ '
='F@'= @>@E'1= @'DC@ @? @' 'F='I@@?' A?>' @ @E' F=' ' '
J J=@C='F='F@'DCA @ AC'G='?1 @? @E'I 'A F@C' C JT
=? @ 'F=?' F@'1= @'DC@ @? @' F=C>@E' 1' F='G@C@'?A ' A%'=?'
?E J@?'1AC'1= @'DC@ @? @ ' A E' =C @ '@B@C'I@'J=?='?@E%'=
='C=E@ J=?' '>@?@C= 'JAC@'AC' @ '?1 @? @E'I 'F@'DCA1 'F@'
@]D@ 'A'J=<@' DA?' F@'C=? = A?' F@' =@'A1' - 2'B'= 5 '
2! '#@=C ' ' ' 8% '=?'= FAC ' ?' DDAC'A1' F 'B @G'
' F@C@1AC@' F ?<' F ' A?B A?'A >F ' A'I@'=11 CJ@E H N@d

F@'DC A?@C'G='='=CC @C%'=?E' E@= 'G F'='IC@G@C' @' G@?' J DC@ @? @
A' F@'IC@G@C'=?E'=E%7 'G=?'='= <'A1'+ +'=@' 'G ' = ' A?' =1 @C'AI=?>'
J 'G='I=< H @' =J@' =>= ?' =?E' =E%7 ' J 'I@@C' C@=E ''H F@'DCAD@C '
F@'IC@G@C' =E%7)@ H F@'DC A?@C' AA<' ' D' = ?>%7 ' ' ?A' 11 @?
1AC' &%%H GF F' 'G='?A ' 'G='AIZ@ @E' F='F@'DC A?@C'E E'
?A'AI=?' F@' =@' I 'J@=?'A1' F@'1= @'DC@ @? @%'=' F@'ACE@C'
G='AC>?= '>B@?'1AC'F J @1%'=?E' F@'E E' ?A ' =' =? F ?>' A1'
&' ? 'F@'F=E'>A'DA @ A?'A1' F@'=@;' & >F J=?% % F@ E'
F='F@'AIZ@ A?'G='1= ='NWd

'GF@C@' DA?'=?' ?E J@?'1AC' 1= @'DC@ @? @ ' '=DD@=C@E' 1' F@'DCA @T
F='F@'DC A?@C'G='@JD A @E' A' ' F=11'1AC' F@'DCA @ AC AC'<?AG'
F@'DC@ @? @

W1b /V' 3' +*/'D' ' ' 'HAG' /f W/b /f' '&' ')*=9'.G' 2V' ' '.D.'
/)' (' <'4' E' 2V' ' 'INA Wwb' /)' ' (22O='.' L' ' L' AMG'
Wnd /)']' 22O/'.' L' 'L' YI ' .' 4//*=' ..' 2V' ' 'A

42'*f&+*=/'49/' =?E' G=' A'I@'D=E'-_'D@C'1=?'1AC'='J F'='F@' ' @' ;2'/#'='2' E@J=?E@E' 'Y#''=?E' =@E'F@'F=E' '] FC@@'1=?'F ' F@' 234+''/:'3# DCA @ AC'F=E' @@?'F J'C@JAB@'@ >F @@?'1=?'A1' ' F=11=?E'=EE' 49/'&+*=/'"(/P F@J'A'F@'F@=D'GF F'F@'DC@ @?E@E'F@'F=E' ' F ' J=< ?>' F@' 4/''1/] FC@@'1=?'1AC'GF F'F@' F=C>@E' DA?' F@' C@DC@ @?=A?' F='F@'F=E' '] FC@@'1=? '=?E'?A G F =?E ?>'F '<?AG @E>@' A1' F@'DC A?@C'F=B ?>'=EE@E'@ >F @@?'1=? ' F@'DCA @ AC'D=E'F J' F@' 'Y#;=?E' 'G='F@ E' A?'=' =@'C@ @CB@E' F='F@'DC A?@C' F=E'?A'AI=?@E' F@'JA?@ 'I'J@='A1' F@'1= @'DC@ @? @;1AC'F@' DCA @ AC'<?@G' 'G='1= @'=?E' F@C@1AC@' 'G='?A' F@'1= @'DC@T @? @' F='?E @E'F J' A'D=C'G F'F 'JA?@ ' 723

4' ='2' :/P DA?'=?' ?E J@?'1AC'AI=?>'=' AB@C@ >?' '=DD@=C@E' F='
&/''1/'42'=927' F@'DCA @ AC'=?E'='J=> C=@'G@?'=?E' =G' F@'E@1@?E=?' ?' A?T
49+4' +' "*+ '' @b @? @'A1'=' @ @C' GF F' F=E' F@@?' DC@B A 'C@ @ B@E' = ?>'
7+=' *+ :'42' F='F@'GC @C'G='=I@'A'>B@' ?1ACJ=A?'A1' AJ@F ?>' A' F@'
/'4(+'' 49/' DCA @ ACH'=EB=? =>@'=?E' F='F@'DC A?@C' =E' ' =C@'G='F '
"(=2'/(D=C ?@C' =?E'G='F@' ICA F@C'A1' C'5' =C@' ?@ F@C'A1'GF F'
G='F@'1= ' F@'DCA @ AC'D=E'FJ'=' AB@C@ >?' DA?'GF F'
F@'>=B@'F J'='D=D@C' A?=?>' AJ@' ?1ACJ=A?' GF F' C?@E'
' A'I@' @@ ' F@'E@1@?E=?'C@1 @E' A'C@ C?' F@' JA?@ '
AC' F@'E@1@? @'=?'@?E@=BA C'G=' J=E@' A' F@G' <6' F@'DCA @T
AC'=?E' F@' J=> C=@'G@?' A>@F@C' A' F@' E@1@?E=? ' G@ '
<?A ?>'GFA'F@'G= 1AC' F@'D CDA @' A1' J=< ?>' @B E@? @' A'
DDAC'='=@'=>=?'F J' 5=@A?' '7 1' ' ?E@C =?E' F@'
E@1@?@' @' D' ' ?A F ?>' JAC@' ?AC' @ ' F=?' F ' F='=' ='
A?D C=' @] @E'I@G@@?' F@'DCA @ AC'=?E' F@' J=> C=@'A'
@?C=D' F@'E@1@?E=?' ?A' F@' AJJ A?'A1' F@'A11@?@')A '
G 'Z E>@'1AC' A C@B@'GF@F@C' 'I@' A'AC'?A ' ' ' 1' F@'
E@1@?E=?'E E'AI=?' F@' JA?@ 'I'1= @' DC@ @? @ =?E' <?@G'
F@J' A'I@'1= @'='F@' J@' 'EA@'?A ' >? 1 'GF@F@C' F@ '
? @?E@E' A'@?C=D'F J'AC'?A H1<3'

='42' "(/P FA E' @@J' F='='DC@ @? @' A' AJ@'G F ?' F@' J@=? ?>' A1'
4/''1/'3/ ')' F@' = @'?@@EX?A'I@' F'=?'=C 1 'E@B @'='G ! JDA @' DA?'
=<19' +=' 72<*:' ='J=?' A1' CE ?=C'= A?' ?'='= @'GFJ@' 'G=!X'=E' ?'=C> T
:"2=/' 2'' +' J@?' F='='=?'AD ? A?'F=E'=G= 'DC@B= @E' F='F@' 1C= E' A' A?T
.'+'' 2& 2(:P @'=?' ?E =I@'A11@? @' J 'I@' F'=? =C 1 'E@B @'='GA E'
'+(# 1+<4 2' JDA @' DA?'='J=?'A1'ACE ?=C' = A?';A !E'#@?J=?' ' ' =E'
7 '?@B@C' A E' @@'GF ' F='FA E' I@' DDA @'='J=?'F='Z '
=C '@?A >F' A' JDA @' DA?'='B@C ' JD @'D@C A?'=?E'E@1C= E'F J;
FAG' ' ' A'I@'E@ @CJ ?@E'GF@F@C' F@'E@>C@@' A1'1C= E' ' F'='
F='=JA ?' A'='J E@J@=?AC'V & FA' ' A'>B@' F@'J@= C@'VH
'G='=? G@C@E' F='F@' =G'DC@ C I@E' ' - 2! 6'B'D4 '1!3'
G='F@?' @E;?' F='='=@'F@'E@1@?E=?'G='?E @E'1AC'F=B ?>'
AI=?@E'JA?@'I'DC@ @?E ?>' A'I@' @?'1AC' '1AC' F@' @'A1'
' '=?E' E ' ' =E'7 ' ?A' C J@' ? @ ' F@' =J@'G F'
1= @'A<@? ' F='G@' ?E '='J=?'1AC'J=< ?>'='1AA'A1'=?A F@C'V
@'F J':"! 2'<!'='A? H DA?'GF F' ACE' #@?J=?' ' '
6## #'7 <'!'!'<'DCA @ ACH'1A 'JAC@'F=?' F@'E@1@?E=? H

W^ L 3' 'W ;' ' ' ' E-' 0' 234+ ''49/' ;2'/#'3#'&+*=/'"(/4/''1/='/'
,' :#' >E"6' 7+=' 1 4/:' +':' 2*/(:)/' /)']' 2/3<10' ' ' ' GI' 6 '
'23=/(J/:' 0 '' /V'&' :#'4'='=+ :' "'AYG' ' ,' /'=*/(' ' 2V' ' '
49+4' 49/' "(2=/1<42(' 3/*/J/:' 49/' &+*=/' ADM
=4+4/;/'4'$ 9/'"(=2'/(;)94' ''+'1+=/' "B' /VJ' :#'D' ' ' '.IM
*0/'49='3/'12'J14/:'2&'+44/;"4 ')'42 W b' G' :' +#;'.M.H

1C= E V F DA ? A @ J @ D = 1 = @ G@C@ AJ@ F ?> = E=I @ F@C@ =C@ ?E@@E = @ GF@C@ F@ DC@ @? @ A B@C 1AA F F= E 11 A = F= =?J DA A?F DC= @E ; F GFA A > B@ F@ J@= C@ V 1D3

F@ DC A?@C G= ?E @E 1AC AI = ? ?>= : ?A @ I 1= @ DC@T &F@C@ JA?@ @? @ 1CA J = J @ =C?@ =?E =DD@=C@E F= F@ DC A?@C F=E E@ B@C@E >A?@ A =C?@ =?E = E F N F@ DC A?@CH d J = @C G=? @E AC FCA >F F@ _ A D= 1AC AJ@ GF@= ; =C?@ = E F@ F=E ?A J = J A?@ JDC E@? @ A1 F F@ F@ F=E = ?A @=?E FD GA E @ F J F=B@ F= GF F F@ F@ DCA @ AC E E=?E F@ = E F@ C@= A?F@ E E A G= F= F@ F=E ?A J = F=?>@=?E ?A? @b @? @ A1 GF= F@ DC A?@C = E = ? A?= @]DC@ ?>EA I GF@ F@C F@ AI = ?@E I F@ 1= @ DC@ @? @= G= I J @E F= 1 F@ DC@ @? @ F=E ?A I @@?A @E F@ DC A?@C GA E ?A F=B@ AI = ?@E F@ ?A @ ; F@ ?A @ F@C@1AC@ !'B= A I = ?@E I J @=? A1 F@ DC@ @? @= GF F G= = F@ ?E T J @? = @>@E = ? A = 7 F@ DC A?@C = < 1AC A?@ F ?>= ?E AI = ? =?A F@C ; F@ E E ?A AI = ?F@ _ ?A @ I J @=? A1 F@ DC@ @? @= F FA >F F@ JDC E@? @ A1 F@ DCA @ AC F ?< F= F= ?A 11 @? H 1<3

?F ?E J @? F=C>@E F@ DC A?@C G F AI = ? ?>1CA J & T 9/(f "+(4P =J =?E & =E< ?F @C = ?F JA?@ I DC@ @?E ?> F= F@ F=E 'I/(=9 "" ; 2'/# AI = ?@E F=?F ACE@C 1CA J F@ & ??F = A @C AJD=? 1AC 7+ 234+ '/:' F@ = @F F@J A1F A?@F F ?EC@E 7J ?@C H = JD H F@ DC A?@C 3# 2'f "+(4'/(F=B ?>F ?B@? @E=?F JZaCAB@E J ?@C H = JD @? @C@E ? A D=C ?@CT &(2 :' 49f F D G F & = J =?E & =E< ?F I =F E@@E 1AC Fb D CDA @ A1 249j ;' 3# + J=? 1= C ?>=?E @ ?>F = JD F@ E@@E F@ =D = 9f 9+:' 23P A1 F@ D=C ?@C F D G= A F A? A1 _ A I@ =EB=? @E I 4+ '/:'+'' & = J =?E & =E< ?F ?F @b = F=C@ 1 @C F@@] @ A?F A1 F@ 2(:/(f&2(E@@E & = J =?E & =E< ?F =EB=? @E F@ DC A?@C JA?@ A D=)22:=' 79 19 F@ @] D@? @ A1@] F I ?>F@ = JD =?E AI = ? ?>F@ D= @? 1AC &f 4(</ ' 72<*:' ; =' @?> F F@ C@1 @E A =EB=? @F =? JAC@ JA?@ ? @ F@ 9+J/ ' 4 4*/ :' =>C@@E A >A A = =?F=>@? A @ F@ = JD A?F AJJ A?F ; =?E 9 ; 42f 49f B@CI = =>C@@J @? G= J =E@ I@ G@@?F@ FC@@F= F@ DC A?@C ; 2'/#' 4f 7+ FA E C=B@ =IA F@ A ? C A AI = ?F ACE@C 1AC F@ = JD F A?F 9/*:' 49+4f 49f F@ @CJ F= & = J =?E & =E< ?F FA E D= F J = AJJ A?F 1+=f 7+ '24 A1 8 D@C @? A?= ACE@C C@ @ B@E I F J I@ E@ F =C=B@ ?> 7 49 '' 49f @]D@? @ F AJJ A?F A I@ D= E A F J = AA?= F@ C@ @ B@E 14 F@ ACE@C =?E A I@ D= =I @ A A1 F@ =D = 1 ?E A1 F@ D=C T ?@C F D I@1AC@ E B E ?>= ?F DCA1 ?F F@ A = A?F ?F b @ A?

7C3 /) ' 109+ ; .M : HI 4 =<3 ; 44/ :' 49+4 49/ 6<(# +(f 49f "(2"/("/(=2 '=2) J/f 49/ ; /+=<(/ + ' :' 49+4 4 =2(49/ ; 42 =+# 79/49/(2('24 49f "(/4/ '1/=<=/ :' 7/(f 49f ; /+ '=2 23P 4+ ') 49/ "(2"/(4# '# (<*f &2<' : / :' <"2 '' 49f "(/4/ '1f 3/ ') =<19+=2 72<*:' ; "2=f <"2 '' "/(=2 '=2 2(: '+(# 1+<4 2 '' 72<*:' */+J f+** =<19+=2 7/(f <' &2(4<'+4/*#) &4/ :' 7 49 +' */=2 : /) (/f 2 1+<4 2 '' +4 49/ ; /(1# 2 49f &(+<: <* ' 4+ ' :' : /=) ' ') ' :' +=2 '' (233/ # 4 72<*:' 3f +3=<(: 42 *+# :27 '' + '# (<*f 79 19 : /& ' / :' 49f &2(1f ' /1/==+(# 42 12 '=4 4<4/ +2 (233/(# 7 49 (/&/(/ '1/ 42 49/ 2(: '+(# =4(') 49 2 ; + '0 ' :' ? =2 '' &+*=f "(/4/ '1/=4 72<*:' 9f /T<+**# +3=<(:' 42 /=4+3* =9 +' (<*f 7 49 (/&/(/ '1/ 42 49/ 2(: '+(# 1+"+1 4#' 2 ; + '0 ' : '' 49f 249/(9+ ' : +=2 ' (233/(#' 49/ 12((/14 ('*f 1*/+(*# =' 49+4 + '# &2(1/ =<&& 1 / '442 2J/(12 ; f 49/ 32 : *# (/= =4+ ' 1/ 2 49/ "+(4# (233/ :' 12 '=4 4<4/=2 49/ 2&&/ '1/ 79/49/(49+4 "+(4# 3f + "27/(&<* ; + '' 2(+&//3*f 72 ; + '' ? =2 4 =' =<3 ; 44/ :' 49+4 + '# "(/4/ '1/ =<&& 1 / ' 42 2J/(12 ; f + ' : ; "2=f <"2 '' 49f ; ' : 2& 49/ "+(4# 42 792 ; 4 =2 ; + : / ' 2<) 94 42 9f 12 '= : /(/ : 42 12 '=4 4<4/ + '' 2&&/ '1/ 7 49 '' 49 =2 =4+4<4/ ? + ' :' 49+4 9/49/(4 7/(/ 2 =<19+=19+(+14/(2('24 2<) 94 42 9f */&4 42 49/ : /4/(; '+4 2 '' 2& 49/ 6<(# 7 49 (/&/(/ '1/ 42 +** 49/ &+14=2 &49/ "+(P 4 1<*+(1+=/ ' Y / /f 2 22* */# ' "' AIG' L 0 &' 2<') ' H ' NE G +=4 ' 1 .E =' E' "' EGE ":B /V ! /2()/ ; 49 /(/&2(: "(' ==' .EHG'

F@' DC A?@C' = @E' A' & =J ' =?E' & =E< ?' F= ' F@' F=E' >A ' =?' ACE@C' 1CA J ' F@' & ?? ' = ' A @C ' AJ D=? ' 1AC' A?@' F ?EC@E' =J D %' A' I@' J=E@' ?' =' J A? F%' =?E' D= E' 1AC' ?' =' J A? F' =1 @C' E@ B@C ' ?' F@' 1= F' F= ' F ' = @J @? ' G= ' C @%' & =J ' =?E' & =E< ?' >=B@' F@' DC A?@C' - ' %' F@' AJ J A?' GF F' GA E' I@' E @' A' F J ' ?E@C' F@' = E' =>C@@J @? ' A?' F@' = @' A1' A?@' F ?EC@E' =J D ' " A' F' ACE@C' F=E%' ?%1= %' I@@?' > B@? ' ' G= ' AIZ@ @E' F= ' F@' JA?@ ' AI = ?@E' G= ' JA?@ ' ?' GF F' F@' G= ' ? @C@ @E' ?E@C' F@' E@@E' A1' D=C ?@C F D';=?E' F= ' F@' ? @? ' A' E@1C= E' G= ' ?@>= B@E' I ' F@' 1= ' F= ' F@' JA?@ ' =J @' A ' A1' F@' D=C ?@C F D' 1 ?E ' ?E% DA1 ' =' = @' C@ @CB@E' A?' F@ @' b @ A? %' ' G= ' F@ E' F= ' F ' G= ' ?A ' =?' AI = ? ?>' A1' JA?@ ' I ' 1= @' DC@ @? @ ' G F ?' F@' = @ ' F@' DC A? I' G= ' F=C>@E' G F' AI = ? ?>' JA?@ ' I ' J =< ?>' F=C>@ ' =>= ? ' F@' D=C ?@C F D' 1 ?E %' 1AC' GF F' F@C@' G= ' ?A' 1A ?E= A?' ' = %' I@1AC@' F@C@' A E' I@' =? ' E B A?' A1' DCA1 %' ' FA @' @]D@? @ ' GA E' F=B@' A' I@' D= E' A ' A1' F@' =D = ' 1 ?E%' FA @' F=C>@ ' GA E' I@' J = @C' A1' = A ? ' I@ G@@?' F@' D=C @ ' 1' F@C@' G= ' =' C@= ' 1A ?E= A?' 1AC' F@ @' F=C>@ %' F@ ' 54> #' AJ@' ? A' F@' = A ? %' =?E' I@' E@E @E' 1 AJ' F@' DCA1 ' A1' F@' D=C ?@CT F D ' F@' = ' A1' F@' DC A?@C' G= ' ?A' J AC@' F=?' =' J C@DC@ @?T = A?%' GF F' GA E' I@' B@CF= @E' GF@?' F@' = A ? ' G@C@' >A?@' ? A ' 1 3

34+ ' 2)' 1(/ : 4' ' +112<'4 7 49' +' 9+ '0/(' I # ; /+ ' +2&' +' 9 *4' 2&' /61' 19+ ') /' 7+=' '24 + :* 1 / '4<' : /(' D ' E ! /2' I ' GN

I = ? ?>' " #! ' ?' = A ? ' 1CA J ' =' I =?<@C' I ' EC=G ?>' =' I ' A?' =' D@C A?%' A?' GFA J' F@' D=C ' F= ' ?A' C >F ' A' EC=G%' =?E' GF F' F= ' ?A' F=? @' 1' I@ ?>' D= E%' G= ' ?A ' G F ?' 6@' C@D@= @E' %' .' , ' 9' @A%' ' ' - %' ' 8 %' FA >F' F@' I=?<@C' D= ' J A?@ ' ?' A? @b @? @' F@C@A1' A' =?' @] @? ' F= ' F@' GA E' ?A ' A F@CG @' F=B@' EA?@' F@' DC A?@C' F=E' <@D ' =?' = A ? ' G F' @C = ?' I =?<@C ' 1AC' J AC@' F=?' ' @=C ' F@ ' F=E' A E' F J ' F= ' F@ ' A E' ?A ' = AG' F J ' A' AB@CT EC=G' I@ A?E' - %' I ' A?' F@' - F' " AB@ J I@C%' 9 - 9%' F ' = A ?' G= ' : ' ?' E@ I %' A1' GF F' F@' F=E' F=E' ?A @%' =?E' G= ' A E' F@' J ' >@ ' F@ J ' A J @' J A?@ ' ?' F= ' E= ' F@' J @ ' * C ' (A@%' A?@' A1' F@' D=C ?@C %' =?E' A E' F J ' F@' F=E' I@@?' A I >@E' A' > B@' =' F@b @' A' * C ' = A I ' 1AC' . %' * C ' (A@' = E' 7G@' @C = ?' F= ' ?A ' D= ' %' ? @ ' A ' > B@' ' A J @' J A?@ ' 1 C H @' = E%' 7 C%' ' =?' > B@' A ' =' >AAE' I ' A?' * C ' A @C H * C ' (A@' = E%' 7B@C ' G@ H I A ' GA' FA C ' =1 @CG=CE ' F@' DC A?@C' @? ' =' @ @C' A' F@' I=?<' A? = ? ?>' =' I ' A1' @] F=?>@' ?' F ' AG?' F=?EGC ?>%' A1' GF F' F@' 1A AG ?>' ' =' AD ' $ `

W b'] ' J+ '=' ' ' ' GAG' .EYG' 9 =' : /1 = 2 '' ; +#' 9/' = " "W - / :' 2 '' 49/' - 2 ' :' 49+4' 49/' "(=2 ' / (' 234+ ' / :' ; 2 ' /# '' K79 19 9/' 9+ :' +' 62 4 4' '4 / (/=4 ' <4' 49/') (2< ' :=' 2 '' 7 9 19' 49/' : /1 = 2 '' K7+=' (/=4/ :' +(/' 2" / '' 42' 49/') (+J/=4' : 2<34' 4' ;) 94' 6<=4' +=' 7 /** 3/' =+ :' 49+4' +' 1*/ (0' 7 92' 234+ ' =' ; 2 ' /# 3# " (/=/ ' 4 ') ' +' &+*=/' +112<' 4' K7+=' '24') < *4#' 2&' 49/' 2&P &/ ' 1/ ' 3/1+<=/' 49/ (/' ;) 94' 3/' +' ' +1P 12<' 4 ') ' +&4/ (7+ (:=' 2**210' ' ' : /P * J/ (/ :' 49/' 6< :) ; / ' 4 ' +' :' +: : / : ' H ; +#' +: : ' 49+4 ' '' ; # 2" ' 2 ' ' 49/' =4+4<4/ +)+ ' =4' 234+ ' ') ' ; 2 ' /# 3# &+*=/' "(/P 4/ ' 1/=' 7+=' ' / J/ (' ' 4/ ' : / :' 42' ; / : : *' 7 49 49/' (/+* 3<= ' /=' 2&' 12 ; ; / (1/ ' 4' K7+=' '24' 42' 12 ' 4 (2* 12 ; ; / (1 +* "(21// : ') =' < ' *' /=' 79 / (/' 49 / (/' 7+=' (/+**#' +' :' 4 (<*#+' " /1/' 2&' =7 ' : * ') ? ' 2 (' 42' +" "*#' 42' &(+<: =12 ; ; 44/ : ' '' 49/' 12<(=/' 2&' +' 12 ; P ; / (1 +* 4 (+' '=+14 2 ' ' '' ; #' 2" ' 2 ' Q' +' :' : ' + ; ') J ') ' 49 =' +=' ; #' 2" ' 2 ' '2" 2 '*#' +' :' ' 24' 49+4' 2&' 49/' 12<(4 Q 4' 72<*:' 3/' J/ (# ; =19 / J2<=' 42' ; +0)' /J/ (#' 'O ' +J =9' 4 (+' '=+14 2 '' 49/' =<36/14' 2&+' ' ' : 14 ; / ' 4 S

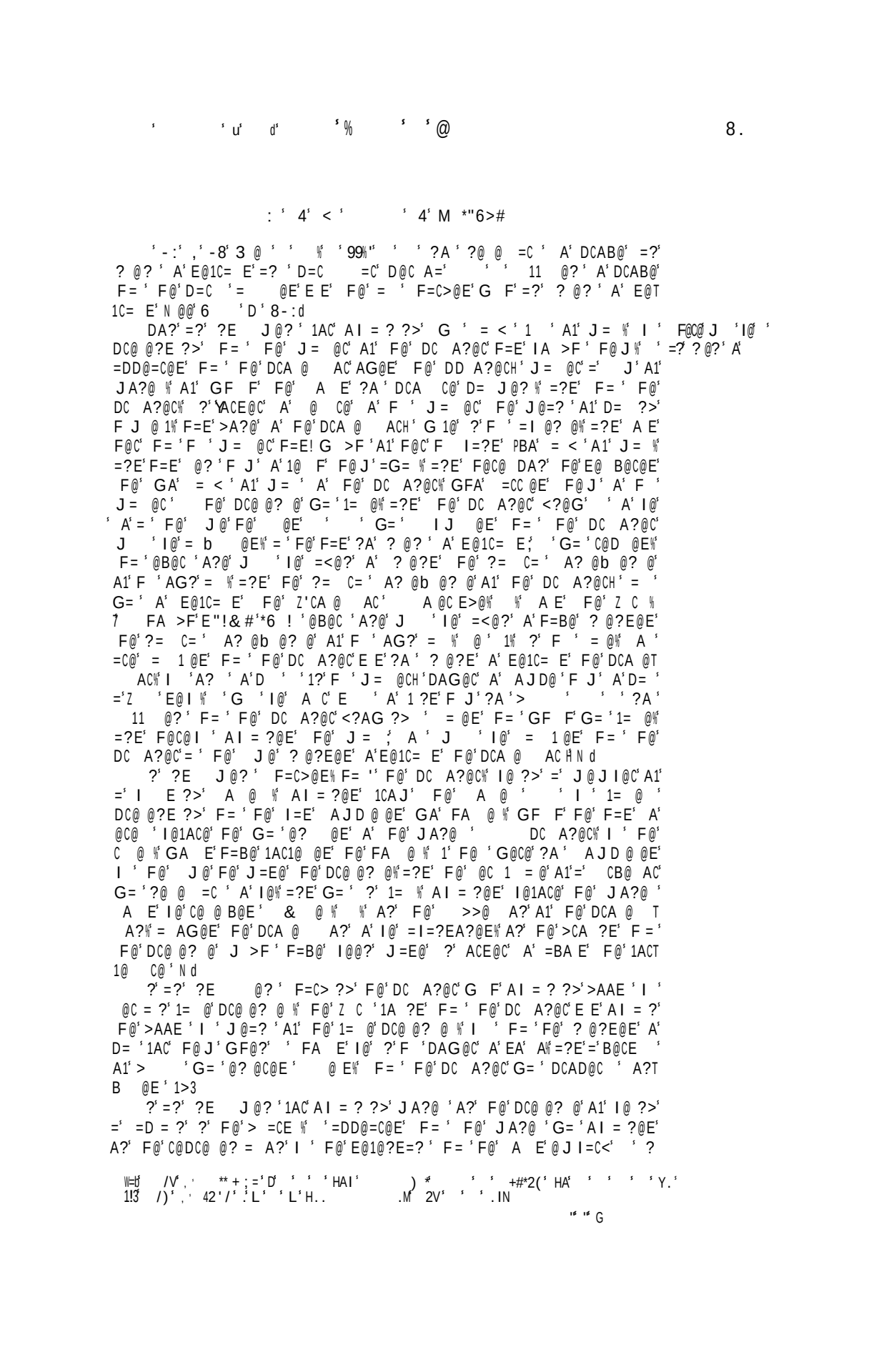
A C F@ E F= F@ G@C@ ?A ; 1AC J =? A F@C b @ A? A >F A F=B@ I@@?
I J @E A F@ Z C 7 3 (

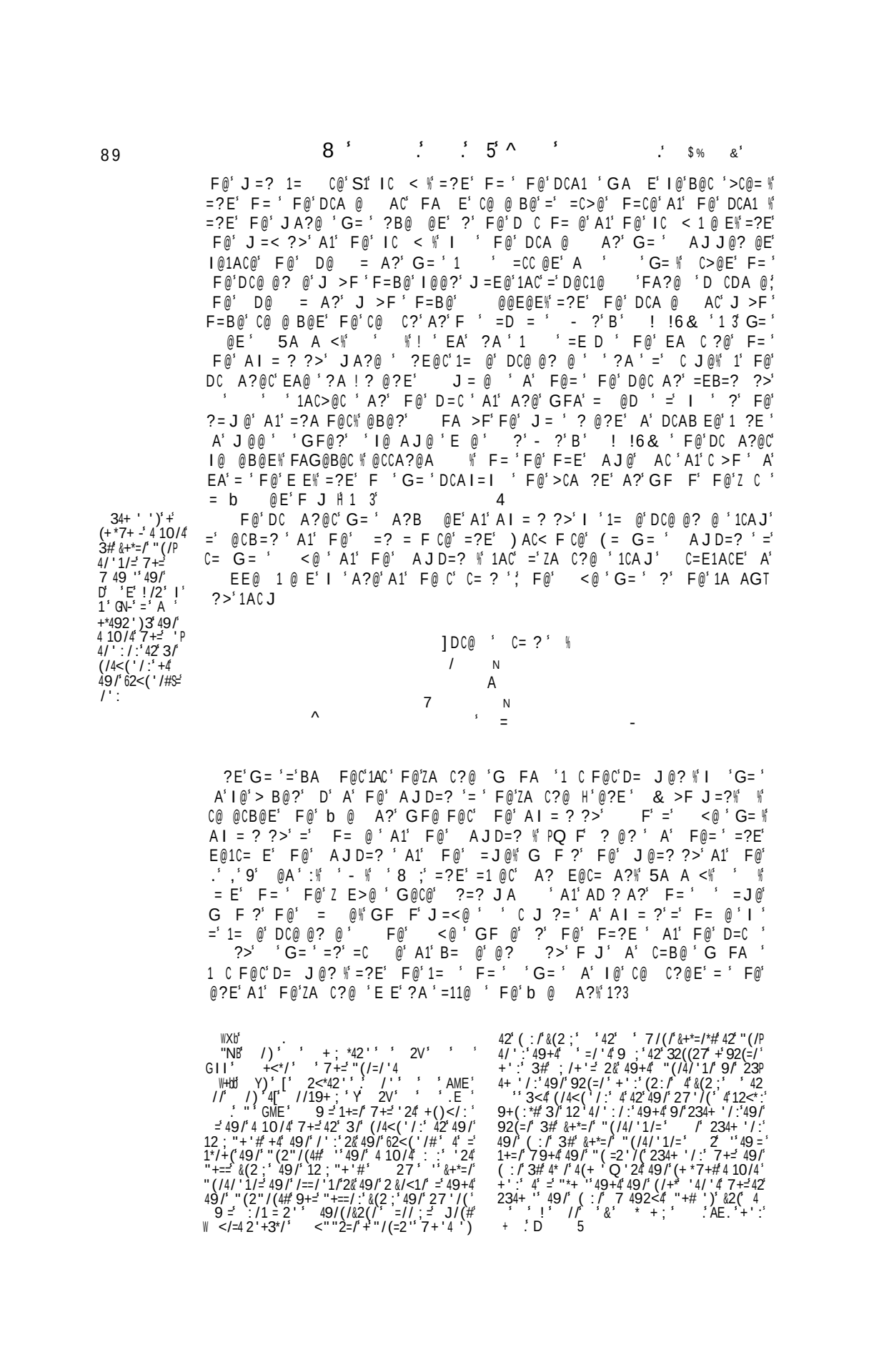
34+) ; 2 /# 3# &+*= 4+ / : '' 4 /))) */44/(7 49 '' 49/ =4+4<4/ +*P 492<)9 49/ ; 2 /#) J/ '' "<(/*# 2<4 2& 19+(4#

I@>> ?> @ @C A? = ? ?>1= @C@DC@ @? = A? 1AC F@ D CDA @ A1 ?E ?> F@ D=C A GFAJ =EEC@ @E A @?E F@ GC @C JA?@ = I@ A I = ?@E I F= @ @C I@ > B@?= = BA ? =C F=C =I @ > 1 F@ DC A?@C GCA @ = @ @C A F@ DCA @ AC ? F@ 1 A ?=J @ A1 #C A 1= @ = ?> F= F@ GCA @ = F@ C@b @ A1 =J @ C@G@C@ = A ?>4 J=? A GFAJ F@ DCA @ AC F=E I@@?< ?E A?@B@C= A = A? =?E1= @ = ?> F= C@G@C G= =EB @E A @?E@=BA C A A I = ?=ED A?? A F@ A? JD A? A D = CAJD A? ?@ H A?EA?; F= F@ G= ?B@C E C@ @E C J =? @ =?E F=E ?A J @=? A1 D= ?> F@ 1@@ A1 F= ? T A?; =?E = < ?> 1AC AJ@ @ = =? @ F@ DCA @ AC I@ @B ?> F@ = @J @? ? F@ @ @C A I@ C @ @? =DA A11 @ ACE@C 1AC A F@ =EEC@ J @? I?@E ?F@ @ @C =?E F G= C@ @ B@E I =?= AJD @ A1 F@ DC A?@ =?E F@ DCA @@E E B E@E I@ G@@?F@J F@ DC A?@C <?@G F= @= F A1 F@ = @J @? ? F@ @ @C G= 1= @ =?E GCA @ F@ @ @C G F ? @? A F@= F@ DCA @ AC A1 F JA?@ =?E @E F@ ?=J @ A1 A 1AC F= D CDA @ G= AIZ@ @E F= F@ DA A11 @ ACE@C G= =J @C@ BA ? =C > 1 =?E F= F@ = @ E E ?A =DD A BA ? =C F=C =I @ > 1 ; I F@ AIZ@ A?G= AB@CC @E =?E F@ DC A?@C A?B @E =?E DA? = @ C@ @ G@E F@ Z E>@ G@C@ ?=? T JA A1 AD ? A?F= F@ A?B A?G= C >F ; F= =I@>> ?> @ @C A? = ? ?> =1= @ = @ +=1= @ DC@ @? @ G F ?F@ = @; =?E F= F@ A11@? @ C@= @E F 3 =>C=? 8 @A :9 G= =E 11@ !@? A1 @? @B K !>A ?> =IA = = A @ AC A1= J , H F= = @ GA E ?A DC@B@? F@ D=C 1CAJ I@ ?> DCA @@E@E =>= ? ?E@C F@ F@?@] ?> = @ GF F F=E = C@=E J =E@ F@ A11@? @ =J E@J @=?AC NCd

Wxt /) . +4=2 HIE .EAD =49/ 2 *# T</=4 2 4<(/ :2 49/ : (/14 2 42 49/ 6<(# 4 =T< 4/ <=/P */==42 =/4 2<4 49/ &+14= 9/ ; +() +# 24/ =4/ 4<4 2 19+(4# 2 /# 3# &+*= 4+/ 12 P 4+ / :' +/))) */44/(=4+4<4/ +*P 492<)9 49/ ; 2 /#) J/ '' "<(/*# 2<4 2& 19+(4# I@>> ?> @ @C A? = ? ?>1= @C@DC@ @? = A? 1AC F@ D CDA @ A1 ?E ?> F@ D=C A GFAJ =EEC@ @E A @?E F@ GC @C JA?@ = =1= @ DC@ @? @ G F ?F@ = @; =?E F= F@ A11@? @ C@= @E F 3 =>C=? 8 @A :9 G= =E 11@ !@? A1 @? @B K !>A ?> =IA = = A @ AC A1= J , H F= = @ GA E ?A DC@B@? F@ D=C 1CAJ I@ ?> DCA @@E@E =>= ? ?E@C F@ F@?@] ?> = @ GF F F=E = C@=E J =E@ F@ A11@? @ =J E@J @=?AC NCd

+==/ 4/ :2 3# 49/ "(2=/1<42(&2(=2 ; / 4 ; / + :7+ 2 7+(/ 2& +# 1+=/ 79 19 4 7+ 9/*: 49+4 ; 2 /# +:J+ 1/ : 42 + 12 1/('' 3# + "+(4 / (1+ '' 3/ 4(/+4/ : + ; 2 /# 234+ / : 3# + 249/("+(4 /(3# &+*= "(/4/ 1/ = 3<4 9/ +)(// : 49+4 49/(/ ;)94 3/ + 1+=/ 2& "+(4 /(=9 " 23P 4+ / : 3# &(+<: + :7+ 2 7+(/ 2& +# 1+=/ 79/(/ 49/ 792*/ 49) 7+ + "(/4/ 1/ + : 49/ "+(4# +*7+# 4/ : / :42 234+ + : +"" (2" (+4/ 49/ ; 2 /# 79/(/ + ' 'P : 14 ; / 4 &2(&+*= "(/4/ 1/ ;)94 * / / ** + ; =2 . : 2V HGE + 42 + ' : 14 ; / 4 3/) ; + 4+ / : &2(&+*= (/ (/=/ 4+4 2 2 3<= / == W(/) + 2 /= / AY 9/ "(=2 / (7+ *= 2 12 J 14/ : 2& 234+) ; 2 /# 3# + 249/(3/))) ; */44/(79 19 7+ 7(44/ 49/ + ; / 2& 2**) (:) / + : : (/==/ : 42 49/ =+ ; / "(2=/1<42(+ : 12 4+ / : + &+*= =42(# +32<4 49/ ; =&2(4<' /= + : 9/+49 2& 49/ =<"" 2=/ : 7(4/(





A' A? @' =?' A I = ? ?>' A1' =' F= @ ' , ' G F ?' - :' ,' -8' 3 @ ' ' ' 99' F@C@' J ' = ' ?' =C @? ' I@' =?' ? @? A?' A' E@T DC B@' F@' AG?@C' GFA ' A1' F ' DCAD@C ' =?E' J @C@ ' A' A I = ?' F@' A=?' A1' =' F= @ ' I ' 1= @' DC@ @? @ ' G F' ? @? ' , ' ' ?A ' G F ?' F@' @ A? ' F@' DC A?@C' I ' 1= @' DC@ @? @ ' A I = ?@E' 1CA J' =' B@C ' =I @' <@@D@C' =' FAC @' A?' F C@' 1AC' =' F CE' D@C A?' CAE@' 'F J T @ 1' E C ?>' F@' J @' A1' F C ?>' =?E' C@ C?@E' ' A' F@' =I @ ' =1 @CT G=CE ' @ E' F= ' =' A?B A?' 1AC' A I = ? ?>' F@' FAC @' I ' 1= @' DC@ @? @ ' G F' ? @? ' , ' G= ' I=E' =?E' C? ' I@' b = F@E' 7 ' 3

3 4 + ' ') ' 3 # & + * = / ' " (/ 4 / ' 1 / = + ' 9 2 (= / ' 2 ' ' 9 (/

DA?' =?' ?E J @? ' ?E@C' =' C@D@= @E' ' 1AC' @= ?>' =' F@b @' 1AC' 8 ' ' =DD@=C@E' F= ' F@' DC A?@C' G= ' RC<' A' F@' (>I ' =B ?> H =?<' ;' F@' A C @' A1' I ?@ ' 1AC' EC=G ?>' A ' J A?@ ' G= ' F ' F@' E@DA AC' >=B@' =' ?A @' A' F@M @C<' A1' F@' =J A ? ' C@T b C@E' =?E' 1' DC@ @? ' A?' F@' ?@] ' ? >F ' A1' I ?@ ' C@ @ B@E' =' F@b @' 1AC' F= ' =J A ? ' 1CA J' F@' J=?=>@C' ?' = @?E=? @' AC' 1' =I @? ' F@' = AG@E' F@' @C<' A' C@ @ B@' F@' F@b @' =?E' A' >@ ' = F' 1AC' ' A' I @' <@D ' I ' F J ' ' = @E' 1AC' =?E' F@' E@DA AC' =?E' @C<' >?@E' F@' IAA< ' A1' = A ? ' =' ?' =' =B ?> 4' I=?< ' F@' DC A?@C' = ' @C<' 1= @ ' DC@ @?E@E' A' ' = A <' F@' J=?=>@C' ?' = @?ET =? @' F= ' ' =I ' =' E@DA AC' F=E' > B@?' ?A @' 1AC' 8 ' =?E' DCA ' E @E' F@' = ' @? C @ ' >?@E' I ' F J @ 1' =?E' = ' ' =I ' G= ' ?A ' ?' = @?E=? @' C@ @ B@E' 1CA J' = A <' =' F@b @' 1AC' ' 1AC' GF F' F@' A I = ?@E' = F' = ' F@' I=?< ' ' =I ' F=E' ?A ' > B@?' =? ' ?A @' AC' = FAC ' A' EC=G' A ' ' AC' =? ' J' =?E' F@' DC A?@C' J=E@' F@' 1= @' DC@ @? @' G F' F@' ? @? A?' 1CA J' F@' I@> ?? ?>' A1' A I = ? ?>' F@' F@b @' =?E' =DDCADC = ?>' ' A' F ' AG?' @ ' A !E ' ?>' A' F@' A C @' A1' I ?@ ' F@' F@b @' G= ' F=?E@E' A' F@' DC A?@C' = ' =>@? ' A1' F@' E@DA AC' ?E' DA?' =' = @' C@ @CB@E' ' G= ' F@ E' F= ' F@' A11@? @' G= ' ?A ' =C @? ' 1AC' ' J ' I@' =<@?' F= ' F@' DC A?@C' C@ @ B@E' F@' F@b @' = ' F@' =>@? ' A1' F@' E@DA AC' =?E' ?A ' = ' F@' =>@? ' A1' F ' @ J D A @C ' F@' J =?=>@C ' A1' F@' =B ?> H I=?< ' =?E' F@C@1AC@' F@' A E' ?A ' I@' F=C>@E' G F' @= ?>' F@' J A?@ ' A1' F@' I=?< ' 783

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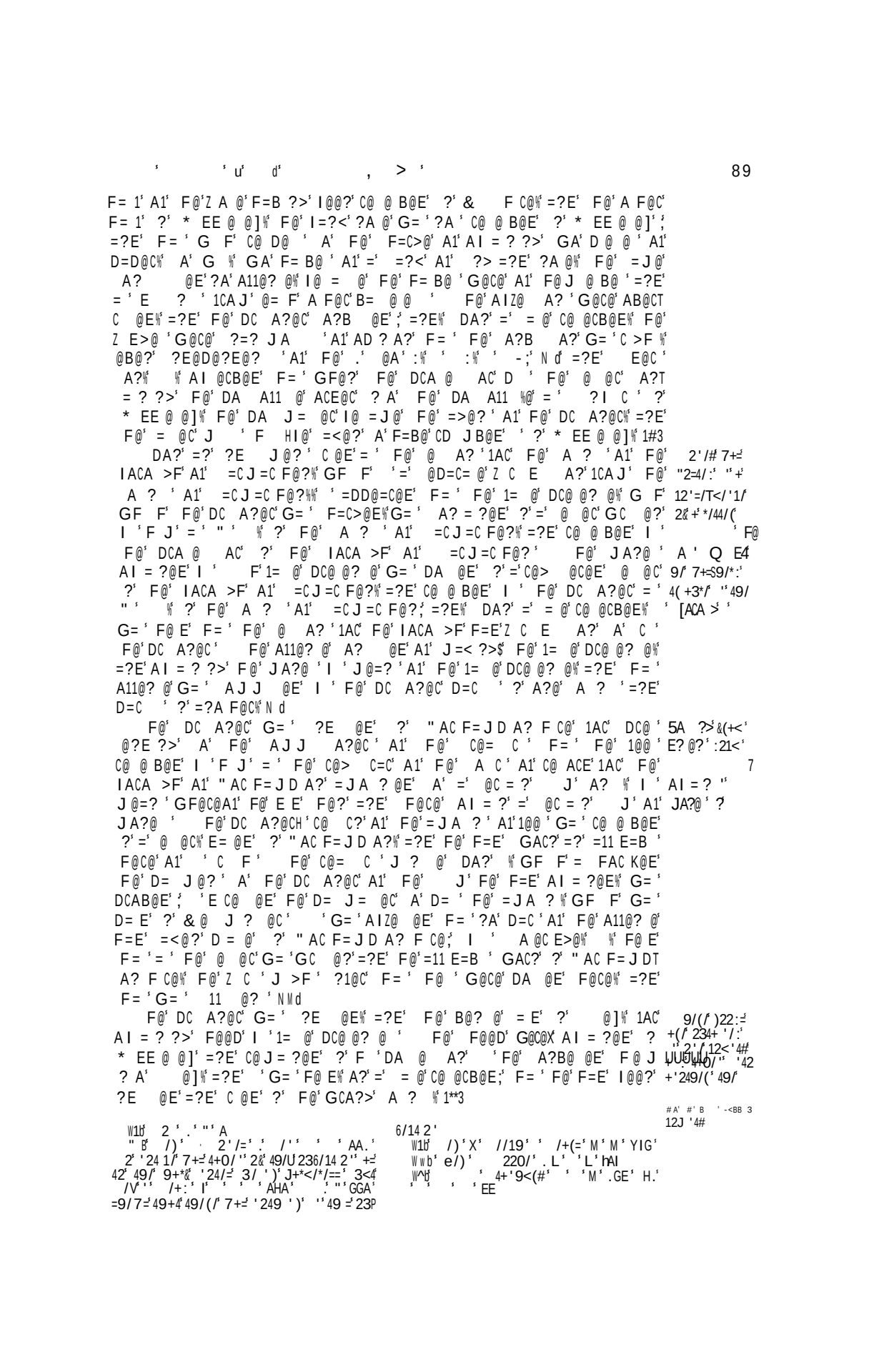
& F@C@' F@' ?E J @? ' G= ' ?' @C@1ACE F C@' =?E' F@' 1= @' DC@ ' / ' < / ' @? @' ?' F= ' A ? ' I ' F@' J A?@ ' C@ @ B@E' ?' * A? J A F F C@' F@' Z E>@ ' F@ E' F= ' F@' ?E J @? ' G= ' = E' ?' F@' GCA?>' A ? ' I@ = @' F@' =?> =>@' A1' F@' ' @A ' ' - :' J =E@' F@' A11@? @' A' A? ' ?' A I = ? ?>' F@' J A?@ ' =?E' ?A ' ?' ?>' =? ' 1= @' DC@

RSB' ' *9+ ; ' HN' ' ' ' ' .MN' ' ' 4 (' <4' 42' 12 ' = 4 4<4/' + ' ' 234+ ' P ') ' 3# &+*=/' " (/ 4 / ' 1 / =' 4' =' / T<+**# / = = / ' ' 4 +*' +=' ' ' *+(1/ ' # ' 49+4' 49 / (/' =9+**' 3/' + ' ' 4 / ' 4 2 ' ' 42' : / " (J/' 49 / ' 27 ' / (' 792**# 2& 9 =' " (2" / (4# * ' : ' 49 =' ' 4 / ' 4 2 ' ' : ' : ' 24' /V =4' ' ' 49 / ' 1+=/' 3 / &2 (/' <=' ' ' =<" " 2 (4 2& 49 / ' 12 ' J 14 2 ' ' 49 / ' 1+=/' 2& 9/' </ / ' ' 2<*42 ' ' ' / ' ' ' AEE ' .N ' ' ' YD ' 7+=' (/&/ ((/ :' 42' 9/ (/' 49 / ' " (=2 ' / (' 7+=' ' : 14 / :' &2 (' 234+ ' ') ' 3# &+*=/' " (/ 4 / ' 1 / =' + (+ *7+# 4 10 / 4 ' 7 49' ' P 4 / ' 4 42' : / &(+<:' 49 / ' 12 ; " + ' # ' 4' 7+=' 9 / *:' 49+4' 49 / ' " (=2 ' / (' 7+=' ( ) 9 4 *# 12 ' P J 14 / : ' 492<) 9' 49 / ' 4 10 / 4 9+:' 42' 3 /) J / ' ' <'" +4' 49 / ' / ' :' 2& 49 / ' 62<(' / # ' 9 /

(/ +=2 ' =' &2 (49 =' : / 1 = 2 ' ' : 2' ' 24' J / (# 1*/+ (*# +" /+ (' 3<4' 4' ; +# 3 / ' : =4 ') < =9 / : ' &(2 ; ' 49 / ' " (/ =/ ' 4' 1+=/' ' ' 49 =' (/ =" / 14 ' 49+4' 49 / ' " (=2 ' / (' 3# <= ') ' 49 / ' 4 10 / 4' &2 (' 49 / ' " <(" 2=/' 2& 4 (+ J / ** ') ' 2 ' ' 49 / ' (+ *7+# ' / ' P 4 (/ *# 12 ' J / (4 / :' 4' 42' 4=' 27 ' ' <=/ ' &2 (' 49 / ' 2 ' *# <=/' &2 (' 79 19' 4' 7+=' 1+" +3*/' 2& 3 / ') ' +" " * / : ' 9 / ' 12 ' J 14 2 ' ' ; <=4 49 / (/ &2 (/ ' 3 / ' T<+ =9 / :

" V B /) ' ' ==/V ' ' ' HD . ' J *9 . EAD ' 9 / ' 2&&/ ' 1 / ' 7+=' 1*/+ (*# 234+ ' ') ' 49 / ' 19/T</' 3# &+*=/' " (/ 4 / ' 1 / =' &(2 ; ' 49 / ' ; + ' <) 2 (' +=' 9 / ' " +(4 / :' 7 49' 49 / ' " (2" / (4# ' ' 4 ' / / ' G . ' GA' /4 ' 1 ' NY ' =' EE ' . ' " ' AGI



W4"&'4*' #! & ' F"!6 ' U !#

"A' ?E J@?'1AC' AI = ? ?>' JA?@ 'AC' A F@C' DCAD@C 'I '1= @' DC@ @? @ ' =?' I@' DC@1@CC@E' G FA ' DC@B A ' = FAC K= A?%, %=' J@? A?@E' ?' BA ' %D'-

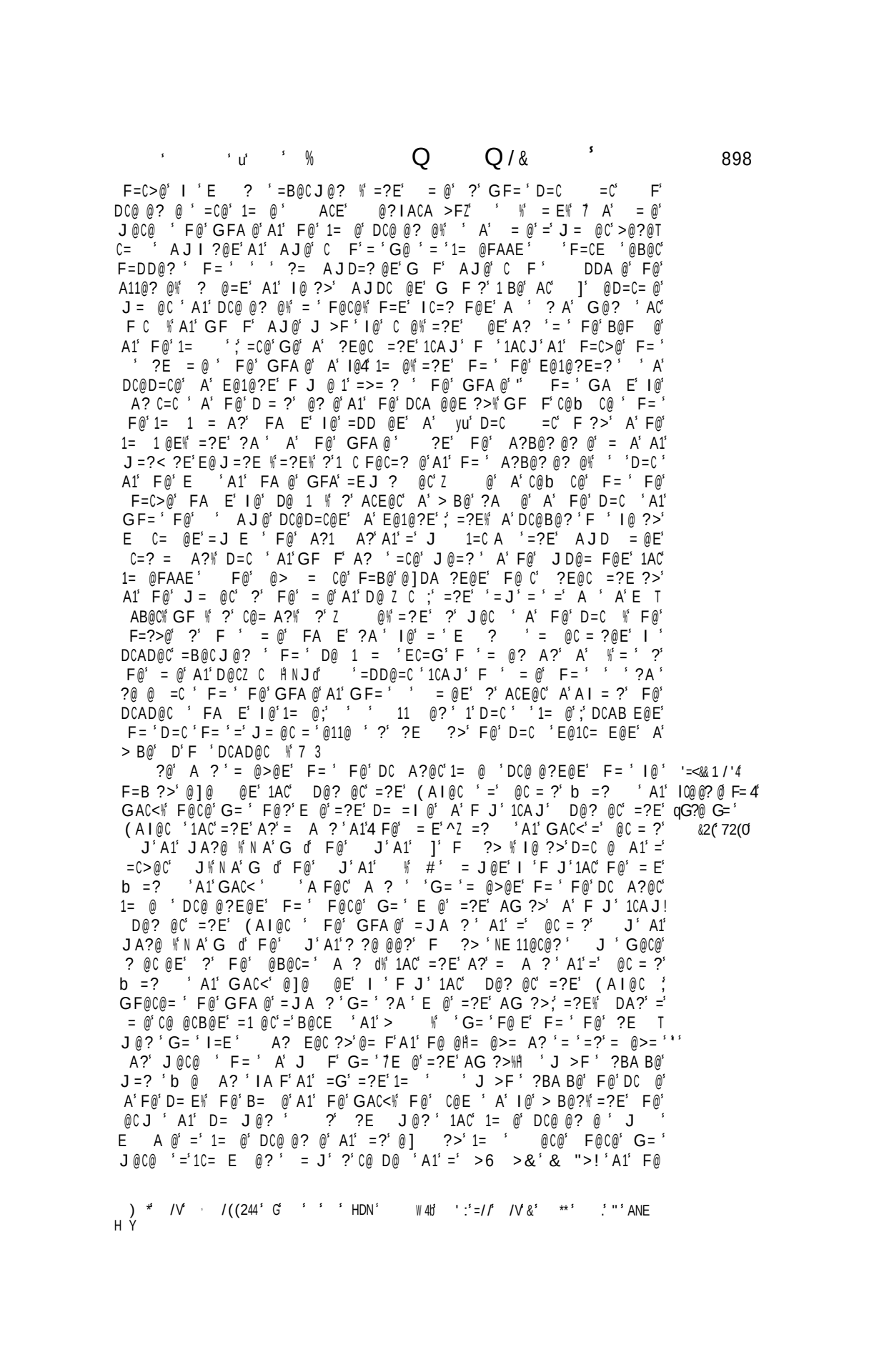
=42'49/' =4+4/ ; /'4'2& 49/' &+*=/' "(/P 4/'1/=' ''49/' ': 14 ; /'4

F@' ?E J@?' FA E' = @' GF=' F@'1= @' DC@ @? @ '=C@' I!3 F@ ' FA E' I@' @'A % ?' ACE@C' F' ' F@' A C'J=' @@' GF=' F@ ' =C@%=?E' GF@ F@C' F@ ' AJ@' G F ?' F@' = @'7K3 ' ' EA@' ?A ' =DD@=C' A' @' ?@ @ =C ' A' E@ C I@' F@J' JAC@' D=C =C ' F=?' F@ 'G@C@' F@G?' E@ C I@E' A' F@' D=C '=' F@' J @;' =?E' ?' A? @b @? @' A1' GF F' F@'G=' JDA @E' DA?;' =?E' 'EA@' ?A' @@J' A' I@' ?@ @ =C ' A' J=<@' =? ' @]DC@ ' = @>= A?' F=' F@' 1= ' @' 1AC F' F@G' =' 1= @' DC@ @? @% 7C3' ?' =' = @' DA?' F@' C@D@= @E' % ' @A'-% ' -:%GF@C@' 'G=' = >?@E'1AC' @CCAC' F=' 'G=' ?AGF@C@' = @>@E' ?' F@' ?Ny J@?' F=' F@'E@1@?E=?'7E E' *6 '' DC@ @?E%H F@' Z E>J@?' G=' ?@B@C F@ @ ' =11 CJ@E' F@' ?E J@?' = @>@E%' ?' I =? @%' F=' F@' E@1@?E=?' ?=G1 % <?AG ?> %' =?E' E@ >?@E 'DC@ @?E@E' @C = ?' F ?> %'7I ' J@=?' A1' GF F' = E'*6 (E" P F@' AI = ?@E' F@' JA?@ ;' =?E%' ?' F@' I @b @?'D=C'A1' F@' ?E J@?%' = ' F@' DC@ @? @ 'G@C@' =B@CC@E' A' I@'1= @';' =?E' F@' A C'F@ E' F ' A' I@' 11 @?' ?E' ' @@J' = A' A' F=B@' I@@?' F@ C' AD ? A?%' F=' F@' Z?E J@?' GA E' F=B@' I@@?' >AAE' 1' 'F=E' A? '= @>@E' F=' F@' E@1@?E=?' AI = ?@E' F@' JA?@ ' I ' F' =?E' F' DC@ @? @ ' N = ?>' F@J d;' =?E' F@?' ' =B@CC@E' F=' FA @' DC@ @? @ ' G@C@' 1= @%* 3' '=' D@ =' =B@CT J@?%' F=' F@' DC@ @? @ % AC' AJ@' A1' F@J%' =C@' 1= @%' =??A' I@' E D@? @E' G F';' =?E%' ?'=' = @' DA?' F@' C@D@= @E' = @%' GF@C@' ' G=' AJ @E%' =?E'=?' @] @D A?' =<@?' A?' =' GC ' A1' @CCAC%' F@' Z E>T J@?' G=' C@B@C @E' F@' A C' A? E@C@E' F@' = @' I '=?= A> ' A' F@' ?@ @ =C ' =B@CJ@? ' ?' =?' ?E J@?' 1AC' D@CZ C ' 1C=J@E' ?E@C' F@' - ' @A'-% ' % *3' =?E' G@C@' E@ E@E 'A1' AD ? A?%' F=' GF@C@' =' D=C ' G=' F=C>@E' G F' AI = ? ?>' JA?@ % , % I '1= @' DC@ @? @ %' =?E' F@' J = @C' F=C>@E' = ' F@' DC@ @? @' A? = ?@E' JAC@' F=?' A?@' DCADA A?%' F@' ?E J@?'A >F ' A' =??A ? @' F@' DC@ @

9/' ': /4' ; /'4' ' ; =4' =4+4/' 49+4' 49/' "(/4/'1/=' 2(=2 ; /' 2&' 49/ ; ' +(/' &+*=/

" B' /V' ' +=2'' G' ' ' AE.' /!' ' ! 2*:= ; 49' :' "' IEH W&B' S< /(S= 1+=/' G' +=4' ' '1' .E' =' .H' "' EHD' ' 12<'4' +**/)/:' 49+4' ; /'=9+7' +' :' *+(O' : :' &+*=/*# "(/4/':' 42' ' 2':' 792' * J/:' +4' 2'/' + :+ ; /' / ; "*/S=' +' :'+14/:'+=' 9/(' (/"(/=/'4+4 J/' 49+4' *+(O' 9+:' 12 ; /' :27'' &(2 ;' 2':2'' 42' 49/' (/= :/'1/' 2& /'=9+7' +' :' 49+4' ' 2':' 7+=' 42') J/' 9 ;' .M=' +' :' 49+4' 49/' =+' ' + :+ ; /' / ; "*/' 7+=')2 ')' 42' +**27' *+(O' .M=' +' 7//O' &2(' 49/'3/'/& 4' 2& 9 =' 9/+*49' #' ; /+'=' 2' 49/'"(=2'/(=' :' +44/ ; "4' 1' + :+ ; /' / ; "*/' 9+:' +=92'" '' 2':2'' +' :'+'249/(' +4' ( )942'' +' :' 49/' "(=2'/(=' 7/'4' 42' 49/' =92'" +4' ( )942'' +' :' =+7' ' 2':' 792' 0/"4' 49/' +112<'4=' 2& + :+ ; /' / ; "*/' 49/(/' +' :' 792' "(2J/:' 49+4' /'=9+7' '' 49/' 9/+(')' 2& *+(O' =+ :' 49+4' *+(O' 9+:' 12 ; /' :27'' &(2 ;' 2':2'' +' :' 9+:' 3// '' ' '' (2 ; "42'' 2=" 4+' 7 49' +' 3+:'*/)

+' :' 9+:' =// '' + :+ ; /' / ; "*/' '' 2':2'' 792' 9+:' =+ :' 49+4' =9/' W 2':B 7+=' 42') J/' *+(O' .M=' +' 7//O' 79*/' 9/' 7+=' '' ( )942'' &2(' 49/' 3/'/& 4' 2& 9 =' 9/+*49' 9/' (/&<=/:' 42' :2' =2' ' :' <"2'' +' 1+=/ (/=/(J/:' 4' 7+=' 9/*:' 49+4' 49/' ': 14 ; /'4' : :' '24' =<&& 1 /'4*# +**/)/' +' # "(/4/'1/' 2& +'' /V =4 ')' &+14' /)' &' /'=9+7' ' ' ' III' 9/' 2<(4' =// ; ' 42' 9+J/' 492<)94' 49+4' &' 49/' ': 14 ; /'4' 9+:' +**/)/:' 49+4' 2':' 7+=' 42') J/' 49/' ; 2'/# '+112<'4' 2& +:+ ; /' / ; "*/' 4' 72<*:' 9+J/' 3// '')22:' '' 49/=/' =2(4' 2& 1+=/' 49/(/' 2<)94' 42' 3/' +'' +J/(; /'4' 49+4' 49/' "(=2'/(' 7+=' +<492(a/:' 3# 49/' "+(4# 42' +=O' &2(' +' :' 42' (/1/ J/' 49/' ; 2'/J' ' ' ! R*B' ' +=4' ' '1' .E' =' .H' "' EHD' EHO' /(((/#S= 1+=/' (2' +(' AYI ":B' /V' ' (/#' G' +=4' ' HM' .' D 8 W^% .' 9+"' 2'' * 5



DC A?@CH GAC< =?E =IA C =?E F@ ?E J@? GA E I@ DT DAC @E I @B E@? @ F= F@ DC A?@C J=E@ =1= @ @ J= @ A1 F@ B= @ A1 F GAC< F@ 1= @ DC@ @? @ A? @E A1 ?A F ?> JAC@ F=?> GF= J >F I@ J = @C A1 AD ? A? =?E F ?E J@? J >F I@ DDAC @E I @B E@? @ A1 = J @C@ GCA?>1 AB@C F=C>@ AC =J C@DC@ @? = A?> A1 = J = @C A1 =G F@ 1= @ = @ J@? F= J A?@ E @ =?E AG ?> EA@ ?A ?@ @ =C ?BA B@ =1= @ DC@T @? @ A1 =?> @] ?> 1= NAd

=42 49 1/(P 4+ 4# 7 49 79 19 +=+*=/ "(/4/ 1/ =92<* 3/ =4+4/ :

?> = = @ GF F F= I@@?> DC@B A J@? A?@E A?> =?A F@C DA ? NhDd =?> AIZ@ A?> G= =<@?> F= F@ DC@ @? @ G= ?A = @E G F 11 @? " 6! ?= J F = = G=>@C F@C@ ?> J@? A?@E &= = @E A? A F=B@ I@@?> J=E@ 7G F = A A?@ ?> F@ =C J F@?= = F H G FA @ ?>> 1AC F F@ A A?@ H ?=J@ ROB F@ AIZ@ A?> G= AB@CC @E =?E ACE 6@? A? = E F= F@ F=C>@ G= 11 @? @C = ?> A @?=I @ F@ E@1@?E=? A <?AG GF= F@ G@C@ = @E DA?> A =? G@C 1AC =?E F= D@CF=D F@ A A?@ H ?=J@ G F GFAJ F ' G=>@C G= = @E A F=B@ I@@?> J=E@ G= ?A J@? A?@E ?> GF F = @F@ A E ?A F=B@ I@@?> E@ C I@E G F >C@= @C = C= ?E 1 C F@C F= 1 F = G=>@C F=E I@@?> = = E@D@?E ?> G= A J D@ @? A F@ E@1@?E=? A F=B@ DCAB@E ? ?> F@ C E@1@? @

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11 @? A = @ F@ @11@ A1 F@ DC@ @? @ ACC@ =?E F@ B@C GACE @E ?@@E ?A I@ = @E F@ ?E J@? = @>@E F= F@ DC A?@C E E 1= @ DC@ @?E F= F@ G= F@ @CB=? A1 A?@ CAB@ A1 A @ @C I F@C =?E F= F@ G= @? I F@ = E CAB@ A AA<= GA F@ 1@C F@ DCAD@C A1 F@ DCA @ AC 1AC F@ = E CAB@ =?E F= F@ G= @? I F@ = E CAB@ A I F@ = E F@ 1@C A1 F@ DCA @ AC 1A F@ = E CAB@ =?E F= F@ = E CAB@ GA E I F@ = E F@ 1@C 1AC F@ J A1 -9 =?E F= F@ = E CAB@ GA E D= F@ DCA @ AC F@ = E J A1 - _ 1AC F@ = E F@ 1@C =?E F= F@ = E CAB@

2 /) +4/= /+(= IAN 9 = :/1 = 2 =// ; = 42 3/ 7(2') ' + : 14 ; / 4 &2(49 = 2&&/ 1/ 49/ "(/4/ 1/ ; +# / 49/(3/ *+ : 49/ 4/(; +14<+**# <=/ : 2(79+4 +(/ =<3=4+ 4 +**# 49/ =+ ; /? : 12 =/T</ 4*# 4 = <1/(4+ 2 49/ &+1/ 2& 49/ : 14 ; / 4 7 9 19 129(=/ = +: 2"4/ : 9/ & (=4 &+**+1# 49+4 (< =49(2<)9 49/6<:) ; / 4 = 49/+==< ; "P 4 2 49+4 49/ : 14 ; / 4 :2/= 2(4=4+4/ 49/ "(/4/ 1/ 49+4 7+ +14<+**# <=/ :? '2 2 / 1+ :2<3 49+4 & + "/(=2 9+J) :2 / + 1/(4+ T<+ 4 4# 2& 72(0 7(4/= +*/44/(+ :=+#= 49+4 + "2< : = :</ + : 27) &2(49+4 72(0 0 27) 49+4 Y= +*2 / = :</ 7 49 4/ 4 42 :/&(+<: 9 = / ; "*2#/(49+4 = + 2&&/ 1/ 7 49 49/ 14 + : + : 14 ; / 4 <=)/ 49/ J/(# 4/(; = 2& 49/ */44/(72<*: 1*/+(*# 3/) 22 : + : 49+4 7+ =<3=4+ 4 +**# 49 = 1+=/ ? &2(49/ "(=2 /(234+ / : 49/ ; 2 /# 3# +*4/( ) 49/ < : + +112< 4 42 + *+()/(2 / + : "(/=/ 4) 49/ +112< 4 =2 +*4/(/ : 42 9 = / ; "*2#/(= 249/(&+**+1# 7+= 49/ 12 = :/( ) 49/ "(/4/ 1/ +"+(4 &(2 ; 4= 3/) &+*=/ + : ; + : / 7 49 4/ 4 42 : /&(+<: 9/ 1+=/ 7+= 1*/+(*# "<4 2 4= ( )94)(2< : 3# +<*/ W792 =// ; 42 9+J/ */&4 49/ 2<(4 3/&2(/6<:)P ; / 4 7+=) J/ ? 0 9/ +**/)+4 2 66 14 ; / 4 3/) /&&/14 49+4 49/ "(P =2 /(; + : / =4+4/ ; / 4 49+4 + :/34 7+ :</ + : 27) 42 9 ; 0 27) 49+4 =4+4/ ; / 4 42 3/ &+*=/ + :&2(49/ "<("2=/ 2& /&&/14) + &(+<: 4 /V1*< : /= 49/ :/+ 2& + : ="<4/ : +112< 4 2(49+4 79+4 = :</ + : 27) = +12 2*<= 2 2& *+7 + : + ; 2< 4= 42 + &+*=/ =4+4/ ; / 4 49+4 + :/34 7+= /V =4) $ +=4*# + 249/(&+**+1# 7+= 49+4 49/ +**/)+4 2 7+= 4(/+4/ : * 0/ + +**/)+4 2 12< 4 &2(72(0 + : *+32<(=4/+ : 2& 3/) 49/ =4+4/ ; / 4 2& + &+*=/ "(/4/ 1/ & + ; + *4/(= + 112< 4 79 19 =9/ 7= A= 42 3/ : </ 42 9 ; + : ; +0/= 4 2 Y= + : 49/ "(/=/ 4= 4 + : 234+ = 49/ ; 2 /# = 2 49 = + "(/4/ 1/ 49+4 49/ *+44/(=<(+ :</ + : 27) 42 9 ; ^ + : 927 1+ + : 14P ; / 4 ; 2(12((/14*# =4+4/ 49/ "(/4/ 1/ 49+ 49+4 9/ "(/4/ : / : 49/ =< ; 7+= </ + : 27) 42 9 ; ^ 9/ 12<(4 49/ : 2<34/ : 49/ J+* : 4# 2& 49/ : 14 ; / 4 /) X 22**/# ; / ; AAN ; " AIG 2 49/ =+ ; /)(2< : = += 49/# : /P 1 : / : 49 = 1+=/ ; Y W" ; 2<) ; " AGE W2 / 49/ +3=4(+14 2& 49/ : 14 ; / 4 : " YGD

GA E I@ AB@C A?F@ ?@] F C E= =?E GA E D= F@ DCA @T
AC 1AC F@ = E F@ 1@C A?F= E= F@ @B E@? @ G= F=
F@ DC A?@C = E F@ =J@ 1CA J CAB@ , =?E F= @ F@C
CAB@ AC F J @ 1 GA E I@ AB@C F@ 1A AG ?> F C E= ;=?E
G= I J @E F= F@ ?E J@? G= DDAC @E; 1 C G=
11 @? A = @ F@ @11@ A1 F@ DC@ @? @ ACC@ =?E F= F@
= @>= A?F= F@ DC A?@C G= @? I CAB@ G= DDAC @E I
DCAB ?> F= F@ = E 7F@ =J@ 1CA J CAB@ H @ A?E F= F@
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1AC@ G= ??@ @ =C A = @ ? F@ Z?E J@? ;=?E
@E= @ F@ E F= F@ @B E@? @ G= 11 @? A DDAC F@
?E J@? ;=?E F@HDC A?@C G= A?B @E 7"3
F@ @ A?E A ? A1=?? ?E J@? = @>@E F= F@ E@1@?E=? 9+4=<&& 1 '4
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J@? A1 #C=>AA? =CE ; I J@=? A1 GF F = E 1= @ DC@ @? @
F@ E@1@?E=? E E F@?A I = ?1CA J F@ = E & AAE = @C = ?
B= =I @ @ C A G =?A CE@C%1AC F@ D= J@? A1 F@ J A1
8 A1 =G1 J A?@ A1 F@ B= @ A1 F@ DCAD@C A1 F@
= E & AAE G F ? @? A F@= =?E E@1C= E F J A1 F@ =J @;
GF@C@= ? C F =?E ?1= F@ E@1@?E=? G= ?A = F@ J @ A1
J =< '> F 1= @ DC@ @? @ = =D = ?? F@C = E * =Z@ H = E
C@> J@? ; N d =?E G= AIZ@ @E DA?@CCAC =1 @C Z E>J@? %
F= F@ A ? G= I=E 1AC ?A F@G ?> F= F@ = @>@E 1= @
DC@ @? @ G= J=E@ G F ? @? A AI = ?F@ @ C ; I F@
A C A1 W @@?H @? F F@ E F= F@ A ? G= ?A I=E 1AC
AJ ?> F = @>= A? -?E F= F@ A ? A >F A F=B@
F@G?FAG F@1= @DC@ @? @ G= = = @E A@11@ F@ AI = ? ?>
A1 F@ ACE@C ; I F@ A C F@ E F= F 'G= J = @C A I@ F@G?
I F@ @B E@? @ =?E ?@@E ?A I@ F@G?I Fu ?E J@? %
CE F= A >F A I=B@ I@@?F@G?F= ?1= F@ D=C =C
DC@ @? @ E E ?E @ F@ D=C LE@1C= E@E A D=C G F F@ ACE@C;
I F@ A C F@ E F= H A E ?A I@ ?@ @ =C A = @ F=
F@C@ G= ?A DC@ @? @ I@ E@ F= F=C>@E =E F@ E@1@?E=?
F@G?F= F@C@ G= !=? A F@C GF F = @E : F F= F@ 1= @FAAE A1
F@ DC@ @? @ G= ?A DCAD@C J=E@ A =DD@=C F@ DC@ @? @
G= F= F@ E@1@?E=? 7 F@?%H F= A = A?F@ E= ?=E @=C
=1AC@ = E G= =D = ?; F@ I @b @? = @>= A? F= F@ G=
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F=B@ I@@?= =D = ?= F@ @=C D=C A1 F@ E= =?E @= @E A I@
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1 3 9 ' : 14 ; / ' 4 +: : / : 49+4 49/ "(P

"(/4/ ' : / :' 42' 3/" : 4&/(/ ' 4' &(2 ;' 79+4' 4' =' ' // :' ' 2 4' 3/' =/4' 2<4' ' ' 49/' ' : 14 ; / ' 4

=' @C = ?' D=D@C' DCAE @E' I ' F J ' G= ' =f >AAE' =?E' B= E' DCAJ AC ' IA @' 1AC' F@' D= J@? ' A1' 1 B@' DA ?E ;' I ' E E' ?A ' @ ' A ' F@' ? C J@? %' GF F' G= ' =' =?<' A1' @>=? @' ?A @' ;' DA?' =' = @' C@ @CB@E' ' G= ' A? @?E@E' F= ' F@' ? C J@? ' FA E' F=B@' I@@?' @ ' A ' ?' F@' ?E J@? ' F@C@' ' ?A' =B@CJ@? ' @B@?' A1' F@' D CDAC ' A1' F@' D=D@C ' & E@%' ' % 7 & @' =C@' A1' AD ? A?' F= ' F@' AIZ@ A? ' =C@' ? 11 @? ' & F%' C@>=CE' A' F@' C@ ACE%' ' =?' A? ' I@' ?@ @ =C ' A' @ ' A ' F@' ? C J@? ' GF@C@' F@' A C ' A E' E@C B@' = =? @' 1CAJ ' @@ ?>' =' AD ' A1' ' A?' F@' C@ ACE' ; = ' GF@C@' F@' = @' C? ' A?' F@4?= !@' =?E' F=C= @C' A1' F@' ? C J@? ' = ' E ?> F@E' 1CAJ ' ' b = ' A1' >AAE' AC' I=E ' F@' = @ ' @@J ' A' F@G' F= ' F ' ' F@' C @' C @C A? H E@C A?% % !' ' ?A ' ?@ @ =C ' N '' @ ' A ' ? C J@? 4' A1' =? ' < ?E' ?' =?' ?E J@? %' @] @D ' GF@C@' ' ' J = @C = ' 1AC' F@' A C ' A' @@' F= ' F@' F ?>' E@ C I@E' ' E@ C I@E' C >F ' ' F@C@' F@' F=C>@' ' =' 1= @' DC@ @? @ ' ' ' ?@@E @ ' A' @ ' A ? C J@? ' GF F' =C@' ?A ' ?' =? ' G= ' =11@ @E' I ' F@4' @CJ ' =DD @E' A' F@J ' ?' F@' ?E J@? H7! 3

9f' "(/4/ ' 1f' ' // :' ' 2 4' 3f' =927 " 42' 3f' ; + : f' 4 :' 49-' "/(=2 " &(2 ;' 792 ;' 49/' ; 2 ' /# =' 23P 4+ ' / : 49/(' &2(; +' "2 ' 4=

' A ? ' = @E' F= ' ' CAG?' => @@E' G F' ' & A?' =?E' ' @? A?%' ?' A? E@C= A?' F= ' ' CAG?' GA E' C@ @ B@' E B@C ' CA?' C= %' F= C %' , %' 1CAJ ' ' < ? %' F@' =>@? ' A1' =' C= G= ' AJD=? %' =?E' A?B@ ' F@J ' 1CAJ ' ' * =C H' A' 6 %' F= ' ' & A?' ?E' ' @? A?' GA E' D= ' ' CAG?' =' @C = ?' J ' 1AC' F@' =CC =>@' 1' F@' = E' C= %' , ' F= ' ' G= ' F@' E ' A1' ' < ? ' GFA@B@C' F@' E@ B@C@E' =? ' F' C= %' , %' A' ' CAG?%' A' > B@' A' ' F AG?' @C = ?' <@ ' >?@E' I ' ' < ? %' =?E' A? = ? ?>' F@' = J A ? ' A1' C= %' , %' E@ B@C@E%' =?E' F@' D = @' A' GF F' F@ ' G@C@' A' I@' A?T B@ @E ' F= ' GF@?' ' CAG?' C@ @ B@E' F' <@ ' F@%' =1 @C' F@' =CC =>@' A1' F@' = E' C= %' , %' >=B@' F' <@ ' A' ' C ? %' = ' F@' =>@? ' A1' ' & A?' =?E' ' @? A?' ?' F= ' I@F= 1' ;' =?E' F= ' ' F@?' I@ = J @' F@' E ' A1' ' & A?' =?E' ' @? A?' A' D= ' CA& J ' 1AC' F@' = E' =CC =>@' A1' F@' = E' >AAE ' ?' F@' = E' <@ ' J@? A?@E ' F= ' F@' DC A?@C ' ' CAG?' =?E' ' CAG?%' &@ ' <?AG ?>' F@' DC@J @ %' 1= @ ' aC@ @?E@E' A' ' C ? %' = ' F' =>@? ' = ' =1AC@ = E%' F= ' ' CAG?' F=E' C@ @ B@E' @C = ?' CA?' C= ' =?E' F= C ' 1CAJ ' ' < ? %' =?E' F= ' ' < ? ' F=E' > B@?' A' ' CAG?' @C = ?' <@ ' = ' =1AC@ = E' >?@E' I ' ' < ? %' A?T = ? ?>' 1F@' = J A ? ' A1' F@' = E' >AAE ' A' E@ B@C@E' I ' ' < ? ' A' ' CAG?%' =?E' F@' D = @' A' GF F' F@' = E' >AAE ' G@C@' A' I@' A?B@ @E%' =?E' F= ' ' CAG?' F=E' A?B@ @E' < ' 6& ' 1CAJ ' * =C H' A' 6 ' J @=? ' A1' GF F' = E' 1= @' DC@ @? @ ' F@ DC A?@C ' AI = ?@E' 1CAJ ' ' & A?' =?E' ' @? A?' 7=' @C = ?' =C>@' J ' A1' JA?@ %' A' G %' F@' J ' A1' _H ' G= ' C>@E' ?' =CC@ ' A1' Z E>J @? ' F= ' F@' A ? ' ?==E@' F@' =>C@@J @? ' J = @C = %' =?E' F= ' A? ' ' CAG?' G= ' @? @E' A' C@ @ B@' F@' JA?@ ;' I ' ' G= ' F@ E' F= ' GA' D@C A? ' J >F ' C@ @ B@' F@' JA?@ ' @ A?E %' F= ' F@' GAC E ' 7 F@' = J @' H C@1@CC@E' A' <@ ' ;' I ' ' G= ' F@ E' F= ' F@' 1= C' A? C A?' G= ' F= ' ! F@' = J @H C@1@CC@E' A' >AAE ' F CE %' F= ' F@' DC@ @? @' J ' I@' J =E@' A' F@' = J @' D@C A?' 1CAJ ' GFAJ ' F@' JA?@ ' G= ' AI = ?@E%' =?E' F= ' F= ' J ' =DD@=C' I ' F@' ?E J@? ';' I ' ' G= ' F@ E' F= ' F@C@' G= ' ?A F ?>' ?' F@' ' GF F' J =E@' ' ?@ @ =C ' F= ' F@' DC@ @? @' FA E' I@' J =E@' A

F@ =J@ D@C A?= F@ JA?@ G= AI = ?@E 1CAJ ; 1 ?E GF@?
G= E F= I J@=? A1 F@ = E 1= @ DC@ @? @ H F@ JA?@
G= AI = ?@E F= G= =b @ A?A1 @B E@? @$ =?E 1 F@C@ G@C@
=? J @=? A F@G F= F@ DC@ @? @ A AD@C= @E A?
J ?E A1 J >F I@ F@G?? @B E@? @ A C F F= F@
<@ I@ ?> GC @?EA J@? A >F A F=B@ I@@? @ A ;
I G= F@ E F= F@ <@ ?@@E ?A I@ @ A ?< <
": 6 1 3

F@ DC A?@C G= ?E @E 1AC =?= @ J D A AI = ?J A?@ I 1= @ DC@ @? @ @ F=E ? C@E F FA @ =?E 1 C? C@ =?E = 1 C@ F=E F=DD@?@E =?E = D@C A?1CAJ F@ ? 1=? @ A11 @ = @E A? F@ DC A?@C GFb E@ B@C@E A F J =?' ?B@D AC A1 F@ >AAE GF F F@ = E F=E I@@?? I C? I F@ 1C@ AJ @ A1 F@ >AAE J@? A?@E ?' F@ ?B@? AC G@C@ =1 @CG=CE E AB@C@E F@ ?E J@? E E ?A = @>@ =? A? C= ?E@C GF F F@ DC A?@C A E J =<@ =? = J F@ ?E J@? F=C>@E F@ DC A?@C G F F=B ?> E@ B@C@E =1= @ ?B@? ; I E E ?A = @ GF@C@ ?' G= ? C @ F@ ?E J@? = @>@E F= F@ DC A?@C J =E@ = J I @A?E G= ?A = @>@E F= =? = J G= J =E@ 1AC F@ A = ?@E $ = J @C@ 1= @ DC@ @? @ ?= AJD=? @E I =? = J G= RA A11@? @ F CE F@ ?E J@? A >F A F=B@ D@ 1@E F@ D=C =C ?' Fp ?B@? AC GF F G@C@ 1= @ 5 = F=B ?> A? E@C@E F@ DA ? = E F@C@ G= A J F ?' F@J F= F@ FA E ?A > B@Z E>J@? I GA E A? F@Z E>@ 153

F@1C A ? = @>uE F= F@ DC A?@C E E ? =G1 DC@ @?E A F= F@ G 1@ A1 F@ = E DC A?@C G= F@?' E@=E ; I J@=? GF@C@A1 F@ AI = ?@E 1CAJ 8 A1 F@ JA? @ A1 F@ = E C F ? @? A E@1C= E F@ @ A?E A ? G= J =C @] @D F= =EE@E F@ GACE 7=?E A F@C H =1 @C F@ ?=J@ A1 F@ F CE A ? = @E F= F@C@ G= =1C@?E A @ =?E F= F GF@?' F@ G 1@ A1 =1C@@ J@JI@C E @E F@ G= I F@ C @ A1 F@ A @ @? @E A C@ @ B@ 1CAJ F@ A @ H <; =?E F= G= A?@ A1 F@ @G=CE A1 F@ A @ =?E F= F@ DC A?@C DCAE @E A =D=D@C GF F D CDAC @E A I@ = @C 1 = @ A1 F@ 1 ?@C= A1 F@ DC A?@CH G 1@ =?E 1= @ DC@ @?E@E A F= F@ D=D@C A? = ?@E = J@ = A ? A1 F@ E@= F =?E I C = 7A1 F@ = E G 1@ A1H F@ DC A?@C; =?E F= F@ DC A?@CM C @C 1= @ D I@ @?E@E A F= 7 F@ = E G 1@ A1 F@ = E H DC A?@C G= F@?' E@=E =?E F= F@ = F 1C@@ J@JI@C G= @? @E A C@ @ B@ 1CAJ F@ @G=CE A1 F@ = E A @ F@ J A1 I B C @ A1 F@ C C @ ? A? @b @? @ A1 F@ E@= F 7A1 F = E G 1@ H J@=? A1 GF F + 1= @ DC@ @? @ F@ DC A?@C AI = ?@E 1CAJ 8 A1 F@ JA? @ & =?E A F@C G F ? @? A F@= F@ = E =?E A F@C A1 F@ =J@

W(/) , (27 G 2V HIE 49 (: (<*) '' 49 1+=/ 7+ (/12) a/ +44/=2 12 '=<*4) 2*/(:)/ 3# ** + ; = /) /& <419/(/** 4 7+ +*=2 236/14/ : 49+4 49/ ; 2 /# Y 7+ 2 =<&& 1 / 4*# : /=1(3/ : ?3<4 4 7+ "N /) , +O*/# G 2V IEI 9/*: 49+4 4 7+= /! 27 49/ . A 4 : 2/ 2 +"" /+(79+4 3/1+ ; / 2& 49/ /4 1 .MM = .E J2** . " " GI 9/ 1+=/ + : 49/ (/"2(4 J/ (# < '=+4 =&+142(#

']t4 2' 2'' +'' ' : 14 ; / '4 &2(&+*=/*# "(/P 4/ ' : ') 49+4 +'' 'J/ '42(#2&)22: 7+ 4(</ 7 49 '4/ ' 2 : /& <4 :'+ '' 'P =<(+'1/]2 ; ' "+ '#

/J/(+# "2 '4 79/(/ ; 29/# 234+ ' / :' &(2 ; ' +' &(/ ' : *# =21 /4# 2" &+*=/ "(/4/ '1/ 2& "(=2' /(49+4 9 7 &/ 7+ : /+:

=DD@=C@E F= $ $ G= $ A?@ A1 F@ @G=CE $ A1 F@ A @ =?E F= $ F@ JA? @ $ A1 F@ A @ $ G@C@ <@D $?= IA] A1 GF F $ =?A F@C @G=CE =?E F@ =?E ACE A1 F@ ?? GF@C@ F@ IA] G= $ <@D F=E @= F <@ $ F@ DC A?@C G= $ = 1C@@ J@JI@C A1 F@ A @ F@ C @ $ A1 GF F F=E ?A $ I@@?$ @?CA @E $ DC ? @E IAA< A? = ? ?> F@ C @ $ G= $ DCAE @E =?E $ G= $ DCAB@E F= $ = DC ? @E IAA< A1 F@ = J @ < ?E F=E I@@?$ E@ B@C@E A F@ DC T A?@C GFA F=E I@@?$ = J@JI@C A1 F@ A @ $ 1AC JAC@ F=?$ = @=C =?E F=E D= E F $ I C D A? '$ DA?$ F $ @B E@? @ A 1@ F@ E F= $ F@ IAA< DCAE @E G= $ =E J I @ ?$ @B E@? @ =>= ? $ F@ DC A?@C 1?3 4 $ A?@ A1 F@ C @ $ @B@C $ 1C@@ J@JI@C G= $ @?T @E A I@ D= E $ A &a1 F@ 1 ?E $ A1 F@ A @ $ A?$ F@ E@= F A1 F $ G 1@ =?E F@ DC A?@C F=E = @E A F@ @C< A1 F@ A @ $ F= $ F $ G 1@ G= $ E@=E =?E F=E I@@?$ A E I $ F@ @C< F= $ F@ J $ DCAE @ = @C 1 = @ A1 F@C I C = 1 @CG=CE $ = = J@@ ?> A1 F@ @G=CE $ F@ DCAE @E F@ EA J@? $ F @? A?@E ?$ F@ F CE A ? =?E = E A F@ @C< ?$ F@ DC@ @? @ A1 $ $ =?E F@ @ F@C @G=CE F= $ F $ G 1@ G= $ E@=E =?E F@ EA J@? $ G= $ C@=E I $ F@ @C< =?E F@C@A?$ $ $ AA< $ A $ A1 F@ IA] =?E >=B@ $ A F@ DC A?@C $ $ = @E F= $ F@ G= $?E @E A D=C $ G F F@ JA?@ $ I $ F@ @C 1 = @ =?E F= $ F@ FA E ?A $ F=B@ > B@?$ A F@ DC A?@C G FA $ F@ @C 1 = @ $ G= $ DCAB@E F= $ F@ DC A?@CH $ G 1@ G= $ = B@ =?E F= $ F@ @C 1 = @ G= $ 1=IC = @E I $ F@ DC A?@C $ G= $ IJ @E F=Z ?@ F@C F@ 1CE AC @ A?E A ? $ G= $ DCAB@E = $ G= $?A $ F@ = @J@? $ A1 F@ G 1@H E@= F F= $?E @E $ $ A D=C $ G F F@ JA?@ I $ F@ @CT 1 = @ I $ A 1@ F@ E F= $ F@ DC@ @? @ G= $ F= $ F@ G 1@ G= $ E@=E =?E F= $ F@ @C 1 = @ G= $ A? $ @B E@? @ A1 $ $ G= $ F@?$ C>@E F= $ F@C@ G= $ = B=C =? @ = $ F@ DC@ @? @ G= $ = E A F=B@ I@@?$ J=E@ A $ F@ @C< $ 6A 1@ 7 F@ DC@ @? @ $ J=E@ ?$ $ H DC@T @? @ A = $ F@C@ F= $ $ 11 @? $ $ =J ? ?@E A F ?< FAG@B@C F= $ GA E F=B@ I@@?$ 'AAE 1 $ F=E I@@?$ = @E A F=B@ I@@?$ J=E@ A = H $ G= $?@] $ L C>@E F= $ F@ JA?@ $ G= $?A $ AI = ?@E 1CAJ $ $ A 1@ !$ $ D= E I $ F@ F=?E $ A1 $ =?E F@ $ 1AC F $ D CDA @ F@ =>@? $ A1 F@ A F@C H $ &= $?@] $ C>@E F= $ F@ DCAD@C $ G= $?A $ DCAD@C $ = E Y A 1@ 7 F@ JA?@ $ $?$ F@ DA @ A?$ A1 $ $ =?E F@ GA A F@C GFA F=E <@ $ F= $ $ 11 @? $ A DDAC $ F@ A ? $ = ?>$ F@ JA?@ $ = $ F@ JA?@ $ A1 $ $ =?E A F@C H $ G= $?@] $ C>@E F= $ F@ 1C $ A ? $ G= $?A $ DCAB@E $ G= $ =? G@C@E F= $ F@ JA?@ $ G= $ 6 >6 '$?$ $ H F=?E =?E F= $ = $ =>= ? $ =$ GCA?> EA@C G= $ 11 @? $ A DDAC $ F= $ A ? $ =?E A 1@ F@ E F= $ G= $ A $ >@?@C= $ B@CE $ A1 > $ F=B ?>$ I@@?$ 1A ?E $ G= $ JAB@E ?$ =CC@ $ A1 Z E>J@? F= $ F@ = $ A ? $ J@? A?@E 7 F@! = E G 1@H A1 F@ DC A?@C =?E F= $ F= $ A ? $ E E ?A $ = @ F= $ F@ DC A?@C F=E =$ G 1@ I $ A 1@ F= $ FA >F $ F@ = $ A ? $ = $ A F $ G= $ 11 @? = $ $ C@1@CC@E A F@ G 1@ J@? A?@E ?$ F@ A F@C A ? $ G= $ F@?$ C>@E F= $ F@C@ G@C@ @B@C= $ DC@ @? @ $ F=C>@E ?$ F@ = $ A ? = ?E F@?$ F@ A ? $ = @>@E F= $ I $ J@=? $ A1 F@ = E = J@? A?@E 1= @ (E" $ F@ JA?@ $ G= $ AI = ?@E $ F@ = $ DC@ @? @ $ F= $ F@ DC A?@C G= $ @? @E A C@ @ B@ $?

A? @b @? @' A1' F@' E@= F' A1'F ' G 1@' (A 1@% % 7 F= ' ' D@C1@ ' ACC@ ' F@' A ? ' = @ ' @B@C=' F ?> ; =?E' F@?' A? E@ ' G F' =' = @ J @? ' A1' F= ' DC@ @? @% GF F' ' ?' C F' F@' DC@ @? @' GF@C@I ' F@' J A?@ ' G=' A I = ?@E ' F=' A ?' ' @=C ' >AAE H N d ?' ?E J @? ' F=C>@E' F= ' F@' E@1@?E=? ' F=B ?>' ?' F ' AE ' =?E' DA @ A?' =' @C = ?' D=C @ % A' I@' I ' F J ' E@ B@C@E' A' E=C =% A ? @ ' #AG=>@C' A1' F@ @C% DA?' F@' E@ B@C ' A1' GF F' F@' G= ' = FAC K@E' =?E' E C@ @E' A' C@ @ B@' =?E' =<@' F@' J ' A1']' F ?> ' =?E']D@? @' =?E' ?A' J AC@% 1AC' F@' =CC =>@' =?E' DAC @C=>@' A1' F@' = J @ ; @ ' F= ' E@1@?E=? ' DCAE @E' =?E' E@ B@C@E' A' ' =CC % F@?' I @ ?>' @CB=? ' A' F@' = E' A ? @ ' A1' F@ @C% F@' = E' D=C @ % A>@ F@C' G F' =' @C = ?' 1= @ ' =?E' A ? @C1@ ' <@ % J =E@' A' E@?A @' F= ' F@' J ' A1' ? ?@' F ?> ' =?E' @?D@? @' G= ' F=C>@E' 1AC' F@' =CC =>@' =?E' DAC @C=>@' A1' F@' = E' D=C @ % =?E' ? =G1 % <?AG ?> % =?E' E@ >?@E % E E' 1= @ ' DC@ @?E' A' F@' = E' ' =CC % F= ' F@ = E' 1= @' =?E' A ? @C1@ ' <@ ' G= ' =' Z ' =?E' C @' <@ % =?E' F= ' F@' = E' J ' A1' ? ?@' F ?> ' =?E' @? ' D@? @' F=E' I@@?' F=C>@E% =?E' G= ' E @' =?E' D= =I @% 1AC' F@' = IC =>@' =?E' DAC @C=>@' A1' F@' = E' D=C @ ; =?E' F= ' E@1@?E=? ' G= ' = T FAC K@E' =?E' E C@ @E' A' C@ @ B@' =?E' =<@' F@' = E' J ' A1' ? ?@' F ?> ' =?E' @?D@?@@' 1AC' F@' =CC =>@' =?E' DAC @C=>@' A1' F@' = E' D= @ ; I ' J @=? ' A1' GF F' = E' 1= @' DC@ @? @ % E@1@?E=? ' E E' ? =G1 % <?AG ?> % =?E' E@ >?@E ' A I = ?' A1' =?E' 1CA J ' F@' = E' ' =CC ' F@' J ' A1' FC@@' F ?> ' =?E' 1A CD@? @' ?' J A? @ % A1' F@' J A? @ ' A1' F@ H = E' A ? @ % G F' ? @? ' A' F@= ' =?E' E@1C= E' F@C' A1' F@' = J @ ; GF@C@= ' ?' C F' =?E' ?' 1= % , ' F@' E@ B@C ?>' F@' D=C @ ' J @? A?@E' ?' F@' ?E J @? %% =?E' C@ @ B ?>' ? ?@' F ?> ' =?E' @?@8@? @% ? @=E' A1' F= ' GF F' F@' A >F ' A' F=B@' C@ @ B@E% ?=J @ %]' F ?> ' =?E']D@? @% G= ' 11 @? ' ICA >F ' FA J @' A' F@' E@1@?E=? ' ' =DD@=C@E' F= ' F@' D=C @ ' G= ' =' :6 ' A1' 1 F$ DA?' GF F' ' G= ' A? @?E@E' A?' I@F= 1' A1' F@' DC A?@C% ?' F@' 1 C ' D = @% F= ' F@' ?E J @? ' +=' ?A ' DA?' F@' ' @A ' -% @' -:% F ' DA?' =' D I ' A = ' % F@' ' @A ' % ' 89% N d I ' GF F' ' '>?= @'% F= ' 1'=? ' DAC @C% AC' A F@C' D@C A?' @ J D A @E' ?' F@' DAC @C=>@' AC' E@ B@C ' A1' F@' 7 IA]@ % :6 ' D= <=>@ % E6" ' C @ % >=J @% AC' A F@C' F ?> %H J @? A?@E' ?' F@' % F= ' E@ J =?E' AC' C@ @ B@% ?' C@ D@ ' A1' = F' DAC @C=>@' AC' E@ B@C % =? ' >C@= @C' J ' AC' J ' F=?' F@' C= @ ' AC' DC @ ' F@C@ ? I@1AC@' 1]@E% F' D@C A?' F= ' 1AC' @B@C ' F' A11@? @' 1AC1@ ' ?A ' @] @@E ?>' G@? ' ?AC' @ ' F=?' 1 B@' ?> ' $ =?E' F= % I @ ?>' DA?' F' % F@' :6 ' ?' b @ A?' G= ' ?A ' DCAD@C ' E@ C I@E' = ' =' E6" G' F= ' D=C @ ' G= ' ?A ' =' >@?@C ' ?=J @% =?E' F= ' F@' ?E J @? ' FA E' F=B@' E@ C I@E' F@' F ?>' = ACE ?>' A' F@' 1= % N=d ACE' @?IACA >F% ' % G= ' A1' AD ? A?% F= ' 1' F@' ?E J @? ' F=E' I@@?' DA?' F@' ' @A ' % F ' GA E' F=B@' I@@?' =' 1= = ' B=C =? @ ; I ' F= % = ' F@' ?E J @? ' G= ' DA?' F@' ' @A ' -% ' -:% =' I= <@ ' =? G@C@E' F@' >@?@C= ' E@ C D A?' A1' =' D=C @ ' G@

5B /) ' . ' /' 4' ' ' ' GIN' /' /) ' . ' +; *42' ' N ' ' GD. ' 49+4 49/' & (=4 +' :' =/12' :' 12<' 4= 7/(/')22 : ' +*P 492<)9 49/#' : :' ' 24 =927' 927' 49/' "(/P 4/ ' 1/ 12<*:' 2" /(+4/' 42' 234+ '' 49/' ; 2' /#' <"2 ' 79 19') (2<' :' 49/#' 7 /(/' 236/14/ :' 42' 3<4 ' 2' 2" ' 2 ' " (2 ' 2<' 1/ :' 3# 2*&/ ' ' "VB ' 4 4*/ :' 0 '' 14 &2(' (/) <*+4 ')' 49/

(+4/= 2& "2(4/(+)/' 42' 3/' 4+0/ '' 3# ' ' P 0//"/(=' +' :' 249/(' "/(=2 '= 7 49 '' 49/' 1 4 /= 2& 2' :2 '' +' :' /=4 ; '=4/(' 49/' 32(2<)9 2& 2<497+(0' +' :' "*+1/= +:P 6+1/ ' 4 S W+B //' += 42' 49 = 236/14 2 ' ' 220$= 1+=/' . /+19' .MA' G' +=4 ' ' Y.Y

/J/(+' "2 ' 4= 79/(/' +' "2(4/(' :/* J/(/ :' +*2 ')' 7 49' +' 3+=0/4 2C & =9' +' &+*=/' 4 10/4' :/ ' 24 ')' 49+4 N=' * : ' P =4/+ :' 2& Y=' Y : ' 7+=4 2' 3/' "+ :' &2(' 4

@?A >F ' ?' F@' ?@] ' D = @%' ' G= ' AIZ@ @E' F= ' = ' F@' ? ?@' F ?> ' =?E' @?D@? @' G@C@' D= E' A' F@' E@1@?E=? ' I ' F@' @CB=? ' A1' F@' A ? @ ' A1' F@ @C%' F@' ?E J @? ' F=E' J DCAD@C ' =B@CC@E' F= ' F@' JA? @ ' AI = ?@E' I ' F@' E@1@?E=? %' ?=J @ %' F@' FC@@' F ?> ' =?E' 1A CD@? @' ?@B@C' F=E' I@@?' F@C %' =?E' GF@ F@C' AC' ?A ' F@' G= ' IA ?E' A' C@ J I C @' F@C' @CB=? %' F ' D=C =C' J ' A1' FC@@' F ?> ' =?E' 1A CD@? @' G= ' = ' F@' ? =? ' FR' A @' DCAD@C ' A1' F@' @CB=? ' ?E' DA?' F ' D= ? ' ACE' @?IACA >F' F@ E%' F= ' F@' I @b @?' = AG=? @' IV## F@' A ? @ ' A1' F@ @C' E E' ?A ' J =<@' F@' JA?@ ' D= E' A' F@' E@1@?E=? ' 'C' DCAD@C ' = ' F@' F@%' F= ' F@' G= ' ?A ' F=C>@=I @' 1AC' J A !@' F=?' G= ' = ' E @' 1AC' F@' =CC =>@' A1' F@' I= <@ %' =?E' F= ' ' E@D@?E@E' A?' F@C @ 1' GF@ F@C' F@' FA E' D= ' F@' AB@CD ' ' F@' @CB=? ' =1 @CG=CE ' = @E%' F= ' = ' F@' J @' A1' F ' C=? = A?' F@' F=E' ?' F 'LF=?E ' DG=CE ' A1' ? ?@' F ?> ' =?E' @?D@? @%' F@' DCAD@C ' A1' F ' J C@ @%' GF F' ACE' @?' IACA >F' A? E@C@E' 11 @?' A' = ?' F@' =B@C J @? ' ?' F@' = ' D = @%' ' G= ' AIZ@ @E%' F= ' = ' F@' A11@? @' @C = ? ' =J@' G F ?' F@' ' @A ' %' ' 9%' F@' E@1@?E=? ' A >F ' A' F=B@' I@@?' DCA @ @E' A?' F= ' = @' ;' I ' ACE' @?IACA >F' = E%' F= ' F@' C@J @E ' > B@?' I ' F= ' = @' G= ' J = B@%' =?En E E' ?A ' =<@' =G= ' F@' C@T J @E @ ' GF F' I@1AC@' @] @E' @ F@C' = ' AJ JA?' =G%' AC' I ' A F@C' ' A1' 5=C =J @? ' N d'

0L/*2' 2<=*#$ "(/4/' :' =' 3+:

F@' ?E J @? ' = @>@E' F= ' F@' DC A?@C' 7 ? =G1 %'<?AG ?> %' =?E' E@ >?@E ' E E' 1@ A? A ' DC@ @?E;H =?E' =G%' (%' FA >F ' F= ' F@' ?E J @? ' G= ' I=E%' =?E' =1 @C' =? ?>' A =?b @ ' =?E' = ? A?%' %' = @E' F@ ' G@C@' A1' F@' =J @' AD ? A?%' =?E' F@' DC T A?@C' G= ' F@C@1AC@' = b @E%' N d

' : 14 ; / '4' '//:' '24' =4+4/' 49/')22:=' 42' 3/' 49/' "(2' "/(4# 2& +'# "/(=2' 2**#$=' 1+=/

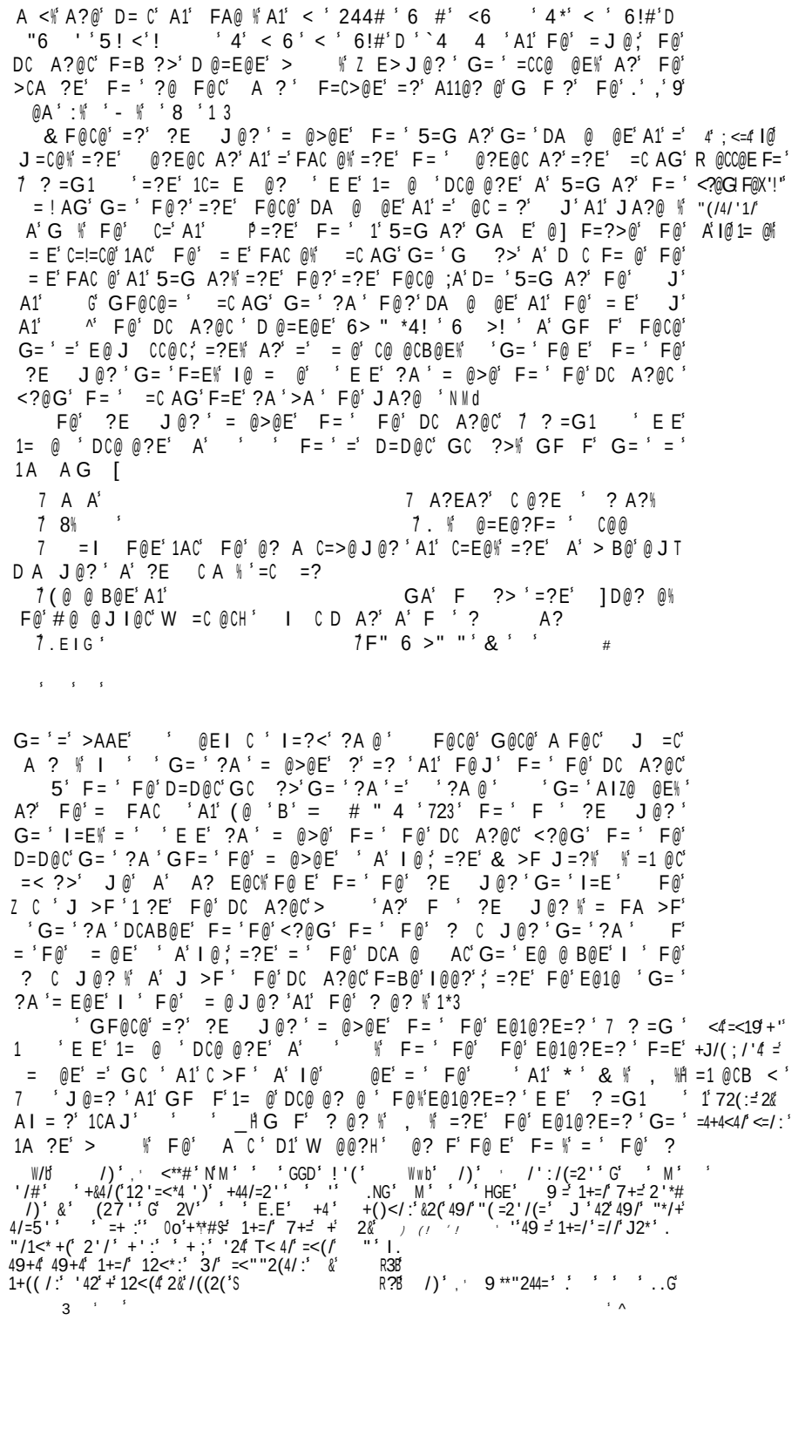
' - :' ,' -8' 3 @ ' ' %' '99%' ?A @E' 6 ' D ' 8- :%' =?' ?E J @? ' 1AC' 234+ ' ')' >AAE ' I ' 1= @' DC@ @? @ ' ?@@E' ?A ' = @>@' =? ' AG?@CT F D' A1' F@' F= @ %' JA?@ %' AC' B= =I @' @ C %' I ' 1AC J@C ' F ' B=' 49/ S7 =/ ' W : D'

& F@C@' F@' 1 C ' A ? ' A1' =?' ?E J @? ' F=C>@E' F=' F@' DC A?@C' E E' 1= @ ' DC@ @?E' A' ' AB@ A <' F=' F@' B=' @?' I ' & %' 5 ' 1AC' =?' ACE@C' A' >A' A' != @ H ' NJ @=? ?>' ' C= @ %' =' FA@' 1= ACd' 1AC' =' D= C' A1' F >F' FA@ ;' I ' J @=? ' A1' BF F' 1= @' DC@ @? @' F@' ? =G1 ' AI = ?@E' 1CA J ' F@' = E' ' C= @ ' A?@' D= C' A1' FA@' A1' F@' >AAE ' =?E' F= @ ' A1' F@' = E' ' C= @ %' G F' ? @? ' A' F@=' F@' = E' D ' `b' '4 *' < ' *"! ' 6 #' 6 > ' 4 *' < ' 6!#' <4 ' A' G %' A1' F@' J ' A1' ? ?@' F ?> ' A1' F@' J A? @ ' A1' F@' = E' ' AB@T A <' ;' =?E' F@' @ A?E' A ? ' F=C>@E' F= ' F@' DC A?@C' E E' 1= @ ' DC@ @?E' A' F@' = E' ' AB@ A <' F= ' & ' 5 ' F=E' = E' F= ' F@' = E' ' AB@ A <' G= ' A' > B@' F J ' =?' ACE@C' A' >A' A' C= @ H ' 1AC' =' D= C' A1' F >F' FA@ ' ;' I ' J @=? ' A1' GF F' 1= @' DC@ @? @' F@' ? =G1 ' AIT = ?@E' 1CA J ' F@' = E' ' C= @ %' ?' F@' ?= J @' A1' F@' = E' ' AB@

WYb' /V' ,' 2<)*+=' .' +; "3' G.G W1b' /V' ' +*O/(' Y' ' ' ' YAD' W (9 =' 1+=/' 7+=' : /1 : /:' <' : /(49/' (/"/+*/ :' 14 b' <4' =/' /V' ' +((+; 1/' ' ' ' GMA' .' "' HMA' 79/ J' +' ' : 14 ; / '4' &2(' 4+O ')' & =9' +**/) /:' 49/ ; ' 42' 9+J/' 3//'' 0&/*2' 2<=*#$ 4+O/' ' +' :' 49/' 6<:)/=' 492<) 94' 49+4' : :' ?A ' J 4 +4/' 49/'

' : 14 ; / '4' ' ' ! 1#3' /) ' ' 2(42' ' E' ' ' ' .NY' *: /(=2' ' ' ** + ; =' +' :' 2*4 ; +' ' =' /V' ' +(4' ' E' ' ' ' IE. ' ** ' * /) ' ' +(=' ' ' ' AAY' /)' &' <**210' /+(=' ' ' IGY

ANH



E J @? ' @E' F@' GACE ' A1' F@' = @%' 'G= ' 11 @? %' =1 @C' B@CT
E %' ?E@C' F@' .' @A' :%' ' :%' '- ' N * d

**/)+4 2'' 2& '4/ '4 42 : /&(+<:
' -:' ,' -8' 3 @ ' ' %' ' 99%' 6 'D' 8-:%' ' ' 11 @? ' ?' F@'
?E J @? ' A' = @>@' F= ' F@' D=C ' = @E' E E' F@' = 'G F' ? @? '
A' E@1C= E' G FA '= @> ?>%' =?' ? @? ' A' E@1C= E' =? ' D= $ =C'
D@C A?
& F@C@' ?' =?' ?E J @? '1AC' 1= @' DC@ @? @ ' F@' GACE '7G F' ?T
@? ' A' E@1C= E%H=C@' A J @E%' F@' ?E J @? ' ' I=E%' =?E' =??A ' I@'
= J @?E@E' ?E@C' F@' :' ,' 8' 3 @ ' ' %' ' ' N d

/J/(+* : /P &/ ' : + ' 4=' ; +# 3/' 19+()/ :' 62 '4*#' '' 49/' =+ ; /' ' : 14P ; / '4' /J/(+* 19+()/=
' F= ' I@@?' F@ E' F= ' @B@C= 'LE@1@?E=? ' J >F ' I@' F=C>@E'
ZA ? ' ?' F@' =J @' ?E J @? %' 1' F@ 'G@C@' = ' = ?>' ?' A? @C'
A>@ F@C%' =?E' =< ?>' D=C ' ?' F@' =J @' C=? = A?%' 7C3' ?E' 'G= '
FA E@?' = A' A' I@' ?A' IZ@ A?' ?' =CC@ ' A14'Z E>J @? ?' F=' F@'
?E J @? ' A? = ?@E' @B@C= ' F=C>@ ' A1' F@' =J @' ?= C@' ?' F@'
E 11@C@? ' A ? ' ACE' 6 @? A?%' ' %' = E%' 7 F ' AIZ@ A?' GA E'
I@' G@ '1A ?E@E' 1' F@' @>= 'Z E>J @? ' A?' '= F' A ? 'G= 'E 11@C@? ;'
' GA E' I@' <@' =' J ZA ?E@C' ?' R B ' = A? ' %' ?' F ' = @%'
F@'Z E>J @? ' A?' = ' F@' A ? ' ' DC@ @ ' F@' =J @;' =' J E@T
J @=?AC' ' F=C>@E' ?' @= F ' * A ' DCAI=I ' F@' F=C>@ ' G@C@' J @=?'
A' J @@ ' F@' =J @' 1= ';' I %' 1' ' G@C@'?A ' A%' ' F ?<' F@ ' J= I@'
ZA ?@E' ?' F@' =J @' ?E J @? H 7D3

'' ' : 14 ; / '4 &2(' + '' +44/ ; "4 42' 234+ '' "(2P "/(4# 3# &+*=/' 4()4/ '1/=' ; <=4 ="/1 &# 49/' +44/ ; 664
?' ?E J @? ' = @>@E' F= ' F@' DC A?@C' !'E E' ? =G1 '= @ J D '
=?E' @?E@=BA C%' 1C= E @? %' 1= @ %' =?E' ? =G1 ' A' AI = ?' 1CA J'
F@' 7 >C C ' = @' ? C=? @' A J D=? 'H =' =C>@' J' A1'
J A?@ %' A' G %' F@' J' A1' - - ' %' G F' ? @? ' F@C@ I ' F@?' =?E'
F@C@' A' F@= ' =?E' E@1C=CCE' F@' = E' 7 >C C ' = @' ? C=? @'
A J D=? ';' H =1 @C' =' B@CE ' A1' > %' DA?' =' = @' C@ @CB@E%' 'G= '
AIZ@ @E' F= ' F@' ?= C@' A1' F@' = @? D ' G= ' ?A ' 11 @? '
D@ 1 @E%' =?E' F@' J A?@ ' G= ' ?A ' = E' A' I@' F@' DCAD@C ' A1'
=? ' A?@ ;' =?E' F@' Z E>@ ' G@C@' ?=? J A ' A1' AD ? A?' F=
I A F' AIZ@ A? ' G@C@' G@ ' 1A ?E@E%' =?E' F@' Z E>J @? ' G=
=CC@ @E%' 1*3

9/' ; /4/ '12=' ; <=4' 3/ "(2J/ :' +=' *+ :
DA?' =?' ?E J @? ' 1AC' AI = ? ?>' J A?@ ' I ' 1= @' DC@ @? @ %'
F@' DC@ @? @ ' GF F%' = ' G@ F=B@' ' @@?%' J ' I@' E ? ' @
A %' N J d' J ' = ' F@' C = ' I@' DCAB@E' = '7 = E' $ A' F= %' GF@C@' F@

W !' /) ' ,' 27/ ' ' .H' ' ' DNM'
2(:' /' ; + ' ' ' 23=/(J/ :' 49+4' /) '
,' /' : /(=2 ' ' -) ' '24/' Wwb ' 7+=' '24'
&<**#' +()</ : ' + ' :' 49+4' '2' (/&/(/ '1/' 7+=' ; + : /' 42' 49/' HM' ! /2' G' 1' GI ' =' . ' 79 19'
12 '4+ ' / :' 49/' 7 2(:=' 00' 27 ')*#' + ' :' : /P
=) ' / : *# '$ '' * /) ' KX ! (<3#' .' 2V' M '
' GIN' 4' 7+=' 9/*:' 49+4' +'' ' : 14 ; / '4'
+**/) ')' 49+4' 49/' "(=2 ' /(' 0< ' *+ 7&<**#'
: :' &+*=/*#' "(/4/ ' :' $ 49+4' +' : 21< ; / '4' 7+=' +'*/+=/' &2(' ' /' #/+(=' 7+=' =<&* 1 / '4' W+&4/(
*/+b' 7 492<4' +'# +**/)+4 2'' 2& 0' 27 '
7 :)/' 49+4' 49/' "(/4/ '1/' 7+=' &+*=/' /)'
,' /' : /(=2 '' 7+=' 49/(/' : =4 ')< =9/ :' +='
'24' 9+J ')' 49/' 72(:' 0<' *+ 7&<**#' $ '' 49/'
' : 14 ; / '4? 3<4' 49 =' 7+=' +' ; =4+0/ ' +='
49+4' 72(:' =' '' G' ' ' ' .NG
' ' ' + ; /=' .G' 2V' ' M ' .GD '
/' J2*' .' " ' AI
Wwb' /) ' ,' *+(4 ' ' E' ' ' ' IE. '
4/) ' ,' 2**+ ' : 'G' ' ' ' ' GDY' 6 '
" ' AID
$ ' /V ' ,' 2<') ' ' " ' AGE' ' '
2' /' 1+=/' 4' =' (/"2(4/ :' 49+4' +<*/ '

=4+4/ :' 49+4' =/J/(+* 12<' 4=' 19+() ')' =/"+P
(+4/' 2&&/ ' 1/=' 3#' 234+ ' ')' ; 2' /#<' </(
: =4 '14' &+*=/' "(/4/ ' 1/=' &(2 ;' : &&/(/ '4
" /(=2 '=' 12<*:' '24' 3/' 1*<: /:' '' 49/
=+ ; /' ' : 14 ; / '4' /) '(' +=/44' .' 2(6
' ' A. ' <4' +=' 49/' "(2=/1<42(' 7+=' "<4
42' 9 =' /*/14 2 ' ' +' :' 49/' "(/J 2<=' /+=/' 7+=
'24' 1 4/ : ' +' :' +=' 49+4' J/(#*/+(' / :'6<:)/'
7 /** 0 ' / 7' 49+4' 49/')' / (+* (<*/' '' ; =P
: / ; /+ ' 2(=' =' 49+4' +' #' '< ; 3/(' 2& ; =: /P
; /+ ' 2(=' ; +# 3/' '1*<: /:' ''49/' =+ ; /' 'P
: 14 ; / '4' "(23+3*#' 49/' 1+=/' =' '12(P
(/14*#' (/"2(4/ :' /' +*=2') ' ' "' YE'
2V' ' / ; "=4/+ : ' ' +#*/#' ' +' :'
* ' ' ' HII
W !' /) ' ,' +(=9' .' 2' ' ' ' AMA'
9/' "(2"/(' 12<(=/' =' 42' +**/) /' 49/' &+*=/'
"(/4/ '1/=' +' :' 42' : / '#' 49/ (' 4(<49' ''49/'
=+ ; /' ; +' ' /(' +=' '' +' ' ' : 14 ; / '4' &2(' 23P
4+ ' ')' "(2"/(4# 3# &+*=/' "(/4/ '1/=' +' :'
49/' '' 42' +**/) /' 49+4' 3# ; /+ ' =' 2' 49/' &+*=/'
"(/4/ '1/=' 49/' "(=2 ' /(' +44/ ; "4/ :' 42' 23P
4+ '' 49/' "(2"/(4# ' ' ' !
W ; !' / ' ' ' ' " ' AEI

?E J @? = @E F= F@ E@1@?E=? DC@ @?E@E <6 < <6#'E6!#'6 >&'4*'&4 ''! 4' < 6 '4*'U 2 6 # =?E =DD@=C@E' DA?' F@ @B E@? @ F= F@ E E' ?A = F= < '&4 ''<6#' : 'E6!#' ? A' F@' I=?<% ACE' @?IACA >F% % F@ E' F A' I@'=' 1= = 'B=C =? @;' =?E' = E% F= =?' = @C A?' F= JA?@ F=E' I@@?' D= E' ? A' F@' I=?<' G= B@C E 11@C@? 1CAJ'=?' = @C A?' F= 'F=E'I@@?'D= E' ? A' F@' I=?<' I '=' D=C =C' ?E B E = % 1 3

?@' A ? = @>@E' F= F@' DC A?@C' DC@ @?E@E' A' A E@?% F@' C@= C@C' A1' F@' AJD=? A1' C@@' F@C =?E' #C@E>@C A1' & F =I @% F= F@' G= F@' =>@? A1' GA' D@C A? '' AJJA? = @E' F@' ! J F@C %H =?E' F= F@' G= @? I F@J' A' F@' D= =I @' A1' F@' = E' A ?D=? A' C@ @ B@' @C1= ?' JA? @ D= =I @' A' F@J% =?E' F= F@' G= = FAC K@E' A'C@ @ B@' F' JA? @ 1AC' F@J ?A F@C' A ? = @>@E' F= F@' DC A?@C' DC@ @?E@E' A' & @C' F= F@' G= =I @' A1' F@' = E' AJD=? A' >@ F@' JA?@ A1' F ^ J F@C %4'' F CE' A ? = @>@E' F= F@' DC A?@C' DC@ @?E@E' A' & @C' F= F@' G= =>@? A1' F@' 7 J F@C %H =?E' F= F@' G= @? I F@J' A' C@ @ B@' F' JA? @ D= =I @' A' F@J% =?E' G= = FAC K@E' A' C@ @ B@' F' JA? @ = F' A ? = @>@E' F= I ' J@=? A1' F@' DC@ @? @ F@' DC A?@C' AI = ?@E' - 9 % =?E' F@' GA' 1C A ? = @E' F@' JA?@ A' I@A?>' A' F@' AJD=? % =?E' F@' F CE' A' & @C' F@' J@JI@C A1' F@' = E' AJD=? =C@' @JD A @E' ?' GAC< ?>' A?' F@' A @C' >CA ?E A1' F@' AJD=? % =?E' =C@' D= E' 1AC' F@ C' GAC<' I F@' C@= C@C;' =JA?> F@' 1C@@J@?' A1' F@' AJD=? =C@' GA' D@C A?' GFA' >A' I F@'?=J@'A1' F@'7 GA' J' F@C %H =?E' F@' JA?@ E @' A' F@J' AJJA? = @E' F@' 7 GA' J' F@C H JA?@ H ?@' C E= '@B@? ?>' & @C% =' @' IA % G@?' A' F@' D= =I @'A1' F@' AJD=? %=?E' = E%7 'G=?' F@'[GA' J' F@C Hn' JA?@ ;H GF@C@A?' A E@?% F@' C@= C@C% D= E' F@' IA -V' % F@' J' F= G= E @' A' F@J ' & @C' DCAB@E' F= F@' DC T A?@C' =J@' A' F J' =?E' =?A F@C' IA % =?E' = E%!' & F F' A1' A G=? A' @=C?' =' D@?? ' 'H =?E' A?' F = ?>% 7 EA%H F@' DC A?@C' = E%7 A' A' F@' D= =I @' =?E' 1@]' F@' [' GA' J' F@C Hn' JA?@ ';H F@' IA = ACE ?> G@? % =?E' = <@E' 1AC' F@' 7 GA' J' F@C H JA?@ ;' C@ @ B@E' % =?E' AA<' A' F@' DC A?@C% =?E' C@ @ B@E' 1CAJ' F J' =' D@?? F@' IA = E' F@' G@?' =?E' C@ @ B@E' F@' JA?@ I@ = @' F@' DC A?@C' F=E' DCAJ @E' F J' =' D@?? F@' C@= C@C' = E' F= F@' D=C @E' G F' G FA F= ?E% DA?' =' = @' C@ @CB@E% G= F@ E' F= F@'1= @' DC@ @? @' G= ?A' EA I % > A1' AI = ? ?>' JA?@ I '1= @' DC@ @? @ ;' I 'G= '= A' @=C' F= F@' DC@ @? @' I 'GF F' F@' JA?@ 'G= 'AI = ?@E' G= F= F@' IA 'F=E' = FAC A' C@ @ B@' % =?E' F= ?A' A?@' A1' F@' DC@ @? @ = E' ?' F@' ?E J@? F@' DC A?@C% ?A' EA I % G= = J F' C@ DA? I @' 1AC' GF= F@' IA = E' = 1' F@% F@' DC A?@C% F=E' >A?@' A' F@' D= =I @% =?E' J=E@' F@' 1= @' C@DC@ @? = A?' F J @ 1;' I F@' C@DC@ @? = A?' A1' F@' IA G= F= F@% F@' IA % F=E' = FAC A' C@ @ B@' JA?@ ;' F@C@' ?A' F' C@DC@ @? = A?' = @>@E' ?' F@' ?E J@? % =?E' F=

. ' /V' , ' ` */=427' .' + ; "' 4 0 4

'

G= ' F@' C@DC@ @? = A?' A?' GF F' F@' C@= C@C' D=C @E' G F' F@' J A?@ %' NAd

+(+ '1/' '' "(22& 2& =/(P J 1/' 2& + '' 2(: /(' '' 3+=4+(:#

?' ?E J @? ' = @>@E' F= ' F@' DC A?@C' DC@ @?E@E' F= ' 1F@' F=E' @CB@E' =' @C = ?' ACE@C' A1' =11 = A?' A?' A?@' ' @ $%H F@' @B E@? @' G= ' F= ' F@' F=E' = E' 1F@' F=E' I@@?' G F' F@' ACE@C' A' C@ I ' A' @CB@' @ %' =?E' @1 ' ' G F' F@' =?E =E ' = ' F@' F@ @C1 @ E' CJ ' F@C@%' GF@C@' @ ' AE>@E' ;H =?E' ' G= ' F@ E' F= ' F@' = @>= A?' ?' F@' ?E J @? ' J @=? ' =' D@C A?= ' @ G @' A1' F@' ACE@C% =?E' A? @T b @? ' F= ' F@C@' G= ' =' B=C =? @' ?' F@' DCAA1' NDd

' "(/4/ '1/' +=' 42' */44/ (= ' A ? ' = @E' F= ' F@' DCA @ C]' F=E' G C @?' =?E' @?' E B@C ' @ @C ' A' F@' DC A?@C% =?E' F= ' F@' DC@ @?E@E' F= ' =' D=C @' A?T = ?@E' F@' = E' @ @C % =?E' @= F' =?E' @B@C ' A1' F@ J %' GF@C@= ' F@ D=C @ ' E E' ?A ' A? = ?' @' = E' @ @C % I ' A? ' A?@' A1' F@ J ' ?' CA @]= J ?= A?' ' =DD@= !@E' F= ' F@' DCA @ C]' F=E' E@ CA @E' A J @' A1' F@' @ @C ' ; ' G= ' AIZ@ @E' F= ' F@' DC@ @? @' F= ' F@' D=C @ ' A? = ?@E' = ' F@' @ @C ' G= ' ?A ' DCA @E' ; I ' F@' A C ' F@ E' F@' = @>= A?' E C I B@%' N>d'

' "(/4/ '1/' 42' 49/' 9 '=3+' : ' +' :' ; 2 ' /# "+ :' 3# 49/' 7 &/ F@' DC A?@C' G= ' ?E @E' 1AC' AI = ? ?>' 1CA J ' @AC>@' C @ ' 8 ' I#' I ' 1= @ ' DC@ @?E ?>' F= ' F@' G= ' =?' =>@?' 1AC' =' A=?' A @ ' @' G@?' A' C @ %' =?E' A E' F J ' F= ' F@' G= ' =?' =>@?' 1AC' =' A=?' A @ %' =?E' A E' >@ ' q' 1AC' F J %' =?E' F= ' F@' F=C>@' GA E' I@' 8 ' I# ;' C @ ' A E' F J ' A' >A' A' F ' G 1@' 1AC' %' GF F' F@' E E%' =?E' = E' F@' = J @' 1AC' 8 ' 1%' = ' F@' J =?' 1CA J ' F@' A=?' A11 @' G= ' G= ?>' 1AC' F@' J A?@ ;' =?E' F@' >=B@' F J ' ' #' A1' F@C' F I=?EH ' J A?@ ;' ' G= ' AIZ@ @E' F= ' F@' DCAA1' G= ' F= ' F@' J A?@ ' G= ' ?A ' AI = ?@E' 1CA J ' F@' DCA @ AC' = ' = @>@E%' I ' 1CA J ' F ' G 1@;' I %' A?' =' = @' C@ @CB@E%' F@' A?B A?' G=' =11 C J @E%' NCd'

3=C =? @' ?' DCAA1' A1' F@' DC@ @? @ ' A ? ' = @>@E' F= ' F@' DC A?@C ' DC@ @?E@E' F= ' AJ@' FA @' F=E' I@ A?>@E' A' =' 1= J ' A1' F@' ?= J @' A1' A E' ;' F= ' *C' A E' G= ' E@ @= @E%' =?E' F= ' F@' 1=? ' B@E' = ' C= 1ACE ' F@' DCAA1' G= ' F= ' F@' DC A?@C ' DC@ @?E@E' F= ' F@' 1= J ' B@E' GA' J @' 1CA J ' H= 1ACE%' =?E' F= ' F@' @ E@C' J @ J I@C' A1' F@' 1= J ' G= ' E@=E;' =?E' ' G= ' F@ E' F= ' F@ @' G@C@' 1= , ' B=C =? @ %' 1 3

+(+ '1/' +=' 42' 49/' =4+4/ ; / ' 4 2& 4+0 ')' +' 92<=/ & F@C@' =' A ? ' = @>@E' F= ' F@' DC A?@C' DCA J @E' ' ' ' A' J =CC ' F@C%' =?E' F= ' F@' =?E' ' ' ' F=E' =<@?' =' J @ =>@' 1AC' F@ C' C@ E@? @' =1 @C' F@ C' J = J =>@%' =?E' F= ' F@' DC A?@C' DC@T @?E@E' F= ' F@' ? @?E@E' A' >A' A' " @G = @' A' D C F= @' 1 C? C@' 1AC' F@' = E' FA @%' , ;' =?E' ' =DD@=C@E' F= ' F@' FA @' G=' ?A

W2b' /)']' <419/(' /** ' ' ' Y' <(')' 49/' +()< ; / ' 4' 2103<(' ' ' ' =+ :' 0 ' + ;' ' 1* ' /:' 42' +)(//' ''49 '0 ')' 49/' 12 ' :<14' 2& 49/' : /&/ ' :+ ' 4 + ; 2< ' 4/ :' 42' +' &+*=/' (/"(/=/ ' 4+4 2 '' ? 3<4' 4' 7+=' +' &+*=/' (/"(/=/ ' 4+4 2 '' 42' 49 =' /&&/ 14? 4' 7+=' +=' &' 9/' 9+:')2 ' /' 42' 49/' "+# 4+3*/' 9 ; P =/*& ' 4+0 ')' 49/' 32# 7 49' 9 ; ? +' :' =+ ; ' Z 9 =' 32# =' +<492(a/ :' 42' (/1/ J/' 49/' ; ' <419/(=$; 2 ' /# $q' //' "+(4 1<*+(*# /)' , ' 2# : ' 6 ' " ' IAN' +=' 42' +' (/"(/P =/ '4+4 2 '' ; +: /' 3# +'' <) / '4' 2&' +' "(P =2 ' /(

1E3' /)' , ' + */#' Y' 2V' ' ' GN' ! (/+J/=' ' ' +&4/(' 12 ' =<*4 ')' *+44 ' 4' 7+=' +*=2' 9/*:' 49+4' 49 =' J+(+ '1/' 7+=' '24' ; / ' :+3*/' <' : /(' 49/' .I' ' .A' /4 ' ' .MM' =' .' J2*' .' " ' AI

W^b' / ;' , ' 2*<11 ' H' L' ' L' .MI' +(4 ' ' , ' +' :' /+4 ') ' ' 4' =' '24 =4+4/ :' 79/ '' 49/' */44/(=' 7/(/' :/=4(2#/ :' 2(' '' 79+4' 7+#' 49+4' &+14' 9+:' +' #3/+(')' 2 '' 49/' ' : 14 ; / ' 4 ' 79 19' +=' (/"2(4/ :' 2 ' *# =4+4/ :' 49+4' 49/' "(2=/1<4(V9+:' =/ ' 4 0 : J/(=' */44/(= $ 79 19' +**/)+4 2 '' : :' '24 ' 1*< : /' /J/(#' */44/(' +' :' 49/' '' 49/' "(/P 4/ ' 1/' (/&/((/ :' 42' 049/' =+ :' */44/(= $ W(b' /) ' , ' 2=/*/#' ' ' NG' ' #' J+(+ '1/' 2& 49 =' 0 ' :' ;)9% 3/' + ; / ' : /:' < ' : /(' 49/' . I' ' .A' /4 1' .MM' =' . ' //' J2*' . ' " ' YI

1E3' /)' ' ' +(: ' ' 2V' ' ' .M. 9/' /12(: /(' 9/(/' 7/(/' 249/(' "(/P 4/ ' 1/=' 3<4' ' 2' "(22& 49+4' 49/# +'2 ' /' ' :<1/ :' 49/' "(2=/1<42(' 42' "+(4 7 49' 9 =' ; 2 ' /#

5 + + + x z / & AND

F C@E ? =1 @C F@DC A?@C>A F@ JA?@ =?E F= F@DC@ @? @ G@C@ J=E@GF F@ G@C@ ?C@= 1AC F@FA @; G= F@ E A? = = @C@ @CB@E F= F@DC A?@C A >F ?A AF=B@ I@@? A?B @E A? F A ? Nd

F@DC A?@C G= ?E @E 1AC AI = ? ?> FAD DA @ 1CAJ A<@ +(+'1/= A I DC@ @?E ?> F= F@ G= = FAC K@E I F@ DC A?@C F@=C ?> F= G=? @E FAD DA @ G@? A F J =?E =>C@@E A @ F J =? J I@C = A J F D@C F ?EC@E A I@ E@ B@C@E = = A? @ F@?G@? A A<@ GFA ' =E FAD DA @ =?E = E F@G= AJT J A?@E I A I F@J =?E DCAJ @E F= GA E @?E =F b @1AC F@DC @ F@b @G= @? ; I ! E E ?A =DD@=C I GFAJ A<@ @? F@ DA @ A F@ = A?=?E >A F@J F@?F@DC A?@C>A F@ JA?@ 1CAJ F J G= C>@E F= F@DC A?@C ?@B@C >A F@DA @ @ DC@ @?E@E A @ >AAE F@ F=E ?A A<@C= 1@E F@ A? C= I@ G@@? =?E F@DC A?@C =?E 1 F@DC A?@C G= ?E =I @= = G= 1AC AI = ? ?> JA?@ 1CAJ =?A >AAE 1CAJ A<@;4=?E & >F J=? A F@ E =?E E C@ @E=?= b = 1>3

F@ ?E J@? = @>@E F= F@DC A?@C 1= @ DC@ @?E@E F= F@ G= F@ @CB=? A1 & =CE J=?A1 < @ N F@ = E & =CE J=?I@ ?> G@ <?AG? A F@DCA @ ACd =?E F= F@ G= @? I F@ = E & =CE J=?A I =FAC @ 1AC F J ; I J@=? , F@DC A?@C F=E >A?@ D A @?E@C A? F@DCA @T AC GFA F=E =J=C@MAC @ =?E= <@E F J 1 F@G= 1AC = @; F@ = E 7)@ 7 & F= DC @VH` 7 - 7 & F@C@ EA A AJ@ 1CAJ H` 7 # @? A? C? 7 F@ =J@ D = @ E F@DC A?@C 7 F= J >AB@C?AC 1CAJ 7 & FA F@VH` 7 * C =CE J=? @?E@C A? <?@G ?A D@C A? A1 F@ ?=J@ A1 =CE J=? I F@ F=E <?AG? B@C G@ A?@ =CE ?> A1 @?G@ AE>@ @?E@C A? =?E F@ DC A?@C F@?G@? A =? ?? GF@C@ @?E@C A?H 1= F@C ZA ?@E F@J @?E@C A? = E A F 1= F@C 7 =J > A ?> A @ = FAC @ A * C =CE ?> A1 @?G@ AE>@ ;H DA? GF F F@ 1= F@C = E 7 @ EA@ ?A B@ F@C@?AG H 7 " A E F@DC A?@C 7F@ B@ ?AG = < @ 1=CJ H ?E F@DC A?@C J = @ >A F@ J=C@ DA? = = @C@ @CB@E G= F@ E F= F@ ?E J@? = @>@E F= F@ DC A?@C DC@ @?E@E F@ G= F@ @CB=? A1 =CE J=?GF @ F@ @B T E@? @ FAG@E F= F@ DCA @ AC A? E@C@E F J F@ @CB=? A1 =CE ?> 1 F@ ?E J@? F=E = @>@E F= F@DC A?@C DC@T @?E@E F= F@ G= F@ @CB=? A1 =CE ?> GA E F=B@ I@@? DDAC @E F@ DCA @ AC A?1A ?E@E =CE J=? G F =CE ?> =?E F@?F@DC A?@C=B= @E F J @ 1 A1 GF= G= D= ?> ?F@ DCA @ ACH J ?E =?E ?<@E =CE J=? ? A =CE ?> G= 1 CT F@C F@ E F= F@DCAB A ?F@ - : , -8 3 @ 99 E E ?A DC@B@? F@ DC A?@C 1CAJ I@ ?> = b @E ; 1AC F= DCAB A EA@ ?A = FAC K@ F@DCAA1 A1 = =C @? ?E@C =? = @ A1 1= F= J = I@ = @>@E ?F@ ?E J@? ; I DCAB E@ F= F@DC A?@C F= ?A I@ = b @E A1 F@ J E@J@=?AC I C@= A? A1 I@ ?> J@C>@E ?F@ 1@ A? FAG ?> F= F@DC@ @? @ = @>@E J I@DCAB@E "&7 B

7 3 O39 , M%E8$ %8 J / / O '24 9+J/ 3// " + ; / : / 9# =<3=4 4<4) 49/ '+ ; / 2 +(: ')&2(+(: ; +" <' : / O39 , J 8 "P Q P 49/ .I .A /4 1 .MM = . /1 O39 , A6 ?3 R / J2* . " AI >E3 E3 E3 8: ?38 ? 9E

/(/ "(2=/P 1<42(12 P &2<' : / : 2 ' / "/(=2 " 7 49 +'249/(

24 ' /1/==+(# 42 "(2J/ +** 4* / "(/4/ '1/=? "(22 2 "+(4 ' +' :' 49+4 49/ ; 2 ' /# 7+= 234+ ' / :' 3# 49+4 "+(4 ' = =<&& 1 / '4

' ' ' ?A ' ?@ @ =C ' A' DCAB@' F@' GFA @' A1' F@' DC@ @? @' F=C>@E' $ DCAA1' A1' D=C ' A1' F' DC@ @? @ =?E' F= ' F@' JA?@ ' G= ' AI = ?@E' I ' F' D=C ' 1 @? ' ?' ?E J @? ' A?' F@' C@D@= @E' = @' ' @A ' -F=C>@E' F@' DC A?@C' G F' AI = ? ?>' JA?@ ' ?E@C' A A C' A1' AI = ? ?>' =' D@? A?' 1AC' =' E F=C>@E' @=J=?' I ' 1= @ ' DC@ @?E ?>' F= ' F@' DC A?@C' F=E' C@ @ B@E' =?' =? G@C' I ' @ @C' ?' C@D ' A' =?' =DD = A?' F@' F=E' J =E@' A?' F@' @=J=?H ' I@F= 1' F= ' GA' > ?@= ' J ' I@' @?' A' F@' ?E@C' @C< ' = ' 1@@ ' (5<! <' < '' 6 56 ' ' ?E # ' 6 # ' <6 ' (4 <! 2' 4> #' < ' #4 ' 5! <4> ' ! ' F@C@' G= ' ?A' @B E@? @' F= ' F@' DC A?@C' @E' F= ' D=C ' A1' F@' DC@ @? @' ?' = ' I ' F@C@' G= ' @B E@? @' F= ' F@' @E' F@' C@ E @' =?E' I ' J @=? ' F@C@A1' I = ?@E' F@' J A?@ ;' =?E' A?' DA ? ' =B@E' F@' A C ' F@ E' ' ?A ' ?@ @ =C ' F= ' F@' GFA @' A1' F@' DC@ @? @' F=C>@E' FA E' F=B@' I@@?' DCAB@E' =?E' F= ' F@' A?B A?' G= ' C >F ' 1 3

(22 2 "+(4 2 "(/4/ '1/= =2 12 ' ' /14/ :' 42)/49/(' 49+4 49/ # 1+ ' '24 3/ =/J/(/ : ' = '24 =<&& 1 / '4

' F@' C @' F= ' ' ' 11 @? ' A' DCAB@' =? ' D=C ' A1' F@' DC@T @? @ ' = E' 1' F@' DCAD@C ' G@C@' I = ?@E' F@C@I ' J ' F@' A?T 1 ?@E' A' FA @' = @ ' GF@C@' F' D=C ' ' =' @D=C= @' =?E' ?E@D@?E@? ' DC@ @? @' 1AC' 1' 1= @' DC@ @? @ ' =C@' A' A??@ @E' A>@ F@C' DA?' F@' C@ ACE' F= ' A?@' =??A ' I@' @D=C= @E' 1CA J ' F@' A F@C' =?E' F@' = @ J @? ' A1' A?@' A1' FA @' DC@ @? @ ' ' ? 11 @? ' ?' DA ? ' A1' =G' ?A' Z E> J @? ' =?' I@' > B@?' DA?' F@' A F@C' DC@ @? @ ' F@' ?E T J @? ' = @E' F= ' F@' DC A?@C' 7E E' 1= @ ' DC@ @?E' A' & ' & = <@C' F= ' F@' G= ' =' =D = ?' ?' F@' @CB @' A1' F@' = ' ?E =' AJT D=? ' =?E' F= ' =' @C = ?' DCAJ AC ' ?A @' GF F' F@' F@?' =?E' F@C@' DCAE @E' =?E' E@ B@C@E' A' F@' = E' & ' & = <@C' D CDAC ?>' A' I@' J=E@' 1AC' F@' D= J @? ' A1' F@' J' A1' - _' G= ' =' >AAE' =?E' B= =I @' @ C ' 1AC' F@' J' A1' - _;H GF@C@= ' F@' E@1@?E=?' G= ' ?A ' =' =D = ?' ?' F@' @CB @' A1' F@' = ' ?E =' AJD=? ' =?E' GF@C@= ' F@' = E' DCAJ AC ' ?A @' G= ' ?A ' =' >AAE' =?E' B= =I @' @ C ' 1AC' F@' J' A1' - _' AC' 1AC' =? ' A F@C' J' A1' JA?@ ' GF= C' A@B@C H DA?' @CCAC' ' G= ' AIZ@ @E' =J A?> ' A F@C' F ?> ' F= ' F@' = @>= A? ' C@ D@ ?>' F@' ?A @'G@C@' AA' AA @' "A' E@ CDT A?' A1' F@' ?A @' G= ' > B@?' F@' C@ ACE' E E' ?A ' F@G' GFA' G= ' F@' J =<@C' ?AC' GF@?' F@' ?A @' G= ' D= =I @' AJ@ F ?>' A >F ' A' F=B@' I@@?' = @E' A' E@? 1 ' ' =?E' F= ' ?E J @? ' A >F ' A' F=B@' F@G?' FAG' F@' ?A @' DCAB@E' ?A ' A' I@' =' B= =I @' @ C ' ' J >F ' F=B@' I@@?' =' 1AC>@C ' AC' ?B= E' 1AC' G=? ' A1' =' =JD' F@ C@ ACE' A >F ' A' F@G' F= ' F@' E@1@?E=? ' <?@G' F@' ? C J@?' A' I@' GAC F @ ' J >F ' F=B@' I@@?' =' ?A @' EC=G?' I ' F J @ ' =?E' F@?' A' 1=C' = ' G= ' =' A<@?' G= ' =' C @' A?@' ?' F@' D=C ' A1' F@' CAG?' G= ' =E J @E' F= ' F@' E@1@?E=? H ' <?AG @E>@' G= ' ?A ' = @>@E' @] @D ' I ' F@' GACE ' !1= @ ' H =?E' 71C= E @? HGF F' G@C@' ?A ' 11 @? ' =?E' F@' ?A @' G= ' ?A ' @ ' A ' A' = ' A' E@? 1 ' ' F@' 1= @' DC@ @? @' A1' I@ ?>' =' =D = ?' ?' F@' = ' ?E =' AJD=? H ' @CB @' G= ' DCAD@C ' = @>@E' =?E' I AC@' A ' F@' A?B T A?' F@' C J@' = ' F=C>@E' I@ ?>' J =E@' D' A1' GA' 1= @' DC@ @? @ ' J ' I@' DC@ J @E' F= ' F@' Z E>@' GA E' @ ' F@' Z C ' F= ' A?@

"&B' /V ' ** ' ' +#*/#' ' +' :' 49/ ; ' 7+=' &+*=/ ' +' :' 49+4 49/ ' ; ' :' 2 49/ ' ' ' .NM' ' /V ' : #' D ' ' ' "(2=/1<42(' 7+=' 2"/(+4/ :' <"2 '' 3# 4' 49/ '' .IM' +44/=2 ' ' =+ : ' 0 4' =' 24 ' /1/=P #2<' 7 ** & ' :' 49/ ' : /&/ ' : +' 4)< *4# ' // =+(# 49+4 +** 49/ "(/4/ '1/= =92<*:' 3/ "/(2*/(:)/ ' ' ' /V e' +*/ ' &+*=/ ' &' #2<' 3/* /J/' 49+4 +' # 2 ' /' 2& "? ADH ' ' ' '1/ ' .G 2V ' ' IY.

A1 F@ J G= A = E = ?A A = 1AC =? =? G@C% 753 ACE
#@? J =?% % 1 F@ ?E J @? F@C@ A J A = ?' GF= C@ D@
F@ ?A @ G= ?A B= =I @ J = F=B@ I@@?' 1AC G=? A1
= = J D% AC 1CA J A F@C = @ & @ EA ?A J @=?' A FCAG =? '
EA I A?' F@ = @ E@ A? % =?E F@C@ J F' A1 F@ =C> J @? 1AC
F@ E@1@?E=? I@ AG ?' GF F' G@ EA ?A A? C F@ DC@T
@? @ = @E ?' F ?E J @? ' J I@ =<@?' A>@ F@C% =?E' F@
1= 1 = A?' = A F= D=C GF F' C@ = @ A F@ ?A @% ?A 11 T
@? F@ Z E> J @? J F@C@1AC@ I@ C@B@C @E H 5= @ A?% %
1 EA ?A <?AG F= A F FA E F=B@ >A?@ F@ GFA @ @?> F' A1 C@B@CT
?>' F Z E> J @? 1 F@ ?A @ F=E =DD@=C@E' A F@ F= A1 =?A F@C
D@C A?, I A? @? G F F ?E J ? % F@ ?A @ J = F=B@
I@@?' F@ E@1@?E=? H AG?% =?E' F@?' F@ DC@ @? @ =C@ A A??@ @E
A>@ F@C F= G@ =??A @D=C= @ F@ J H "0B

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F@ ?E J @? F=C>@E F@ DC A?@C G F' 1 E @ DC@ @?E ?>' F= F@ F=E' A I = ?@E' 1CA J ACE' =? @ F@ =DDA ? J @? A1' @J >C= A?' =>@? = AC 5F D% GF F' G= =' = A?' GAC F' =' @=C% =?E' F= 1AC - F@ GA E > B@ @CA?' A?@ F CE' A1' F@ @J >C= A?' =>@? F D ACE ?>' A' F@ @B E@? @ A1' F@ DCAT @ AC =?E' F G ?@ @ F@ DC A?@C' A I = ?@E' F@ J A?@ I J@=? A1' F@ DC@ @? @ = @E' ?' F@ ?E J @? % GF F' G@C@ 1= @ F@ DC A?@C F=E' = A C>@E' F@ DCA @ AC A' I@ A J@ F D=C ?@C% =?E' @?>=>@E' F= 1' F@ DCA @ AC = @D @E' F DCADA = A1' =' D=C ?@C F D% =?E' =EB=? @E' F J F@ - =' =' IA? % F@ DCA @ AC FA E F=B@' = F CE' F=C@' A1' F@ @J >C= A?' =>@? F D% =?E' A1' F@ A F@C' I ?@ % GF F' F@ DC A?@C' GA E' F=B@' ?' F@ A A? 1 @C' F@ DC@ @? @ = @E' ?' F@ ?E J @? ' F=E' I@@?' J =E@% =?E' I@1AC@ F@ DCA @ AC D=C @E' G F' F J A?@ % =' D=C ?@C F D' E@@E' G= % = F@ DC A?@CH % ? =? Z DC@D=C@E' I F@ DC A?@CH A AC% =?E' @] @ @E' I F@ DCD @ AC =?E' DC A?@C' F@ DC A?@C' F=E% FAG@B@C% DC@B A DCA J @E' F= A?' EC=G ?>' D' F@ E@@E' A1' D=C ?@C F D' I@ G@@?' F@ J F@ GA E' F@G' F@ DCA @ AC F@ @ @C 1CA J ACE' =? @ =DDA ? ?>' F@ DC A?@C' @J >C= A?' =>@? F@ A? E@C= A?' A1' F@ D=C ?@C F D' G= = @E' ?' F@ E@@E' A' I@ - % =?E' ?A' J @? A?' G= J =E@' A1' F@ @J >C= A?' =>@? ?' ?' C@ D@ F@C@A1' G= AIZ@ @E' F= = F@ E@@E' E E' ?A A? = ?' F@ DC@ @? @ = @E' ?' F@ ?E J @? % I A?' F@ A? C=C C@DC@ @? @E' F@ - A' I@ >'B@?' ?' A? E@C= A?' A1' =' >@?@C= D=C T ?@C F D% =?E' = F@ DCA @ AC F=E' J =E@' @' A1' F@ E@@E' = D=C A1' F = @% F@ D=CA @B E@? @' A1' F@ 1= @' DC@ @? @ A >F A' I@ C@T Z@ @E F@ 6 @ ACE@C' AB@CC @E' F@ AIZ@ A?% =?E' A E' F@ Z C F= 1' F@ I@ @B@E' F@ @B E@? @' A1' F@ DCA @ AC% =?E' G@C@ = T 1 @E' F= F@ DCA @ AC ?' 1= D=C @E' G F' F J A?@ A?' F@ DC@T @? @ = E' ?' F@ ?E J @? % =?E' F= F@ DC@D=C= A?' A1' F@ D=C ?@C F D' E@@E% =?E' F@ @] @ A?' A1' % G@C@ =' D=C A1' F@ DC T A?@CH F@ J @' A' @11@ F@ 1C= E% F@ DC A?@C' J >F DCAD@C I@

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& F@C@ F@ DC A?@C G@C@ F=C>@E G F DC@ @?E ?> F= = @C = ? B@ @ G= ? 5@?=C F (A=E =FE F= A?@ A1 F@J G= F@ J = @C =?E F@ A F@C A1 F@J G= F@ J = @ A1 F@ = E B@ @ =?E F= F@ G=? @E F@ J A1 A D= 1AC F@Z' A =>@A1 F@B@ @ =?E G= DCAB@E F= ?A B@ @ =? G@C ?> F@ E@ C D A?? A1 F@ DC T A?@C DDA @E F D F=E =CC B@E AC F=E I@@?? F@=CE A1 EAG?? A F@ C = =?E =1 @C F@ DC A?@C G@C@ ?? AE A?@ A1 F@J = E F= F@ B@ @ G=]D@ @E = G=? @= =?E I @b @? F= F@C@ G= ?A B@ @ = = ; & >F J @@J A F=B@ F@ E F= F@ 1= F= F@C@ G= FA B@ @ = = AC G F GF F F@ G@C@ A?T ?@ @E ?@>= B@E F@ DC@ @? @ F= F@ G@C@ F@ J = @C =?E J = @ A1 F@ DDA @E B@ @ 7 3
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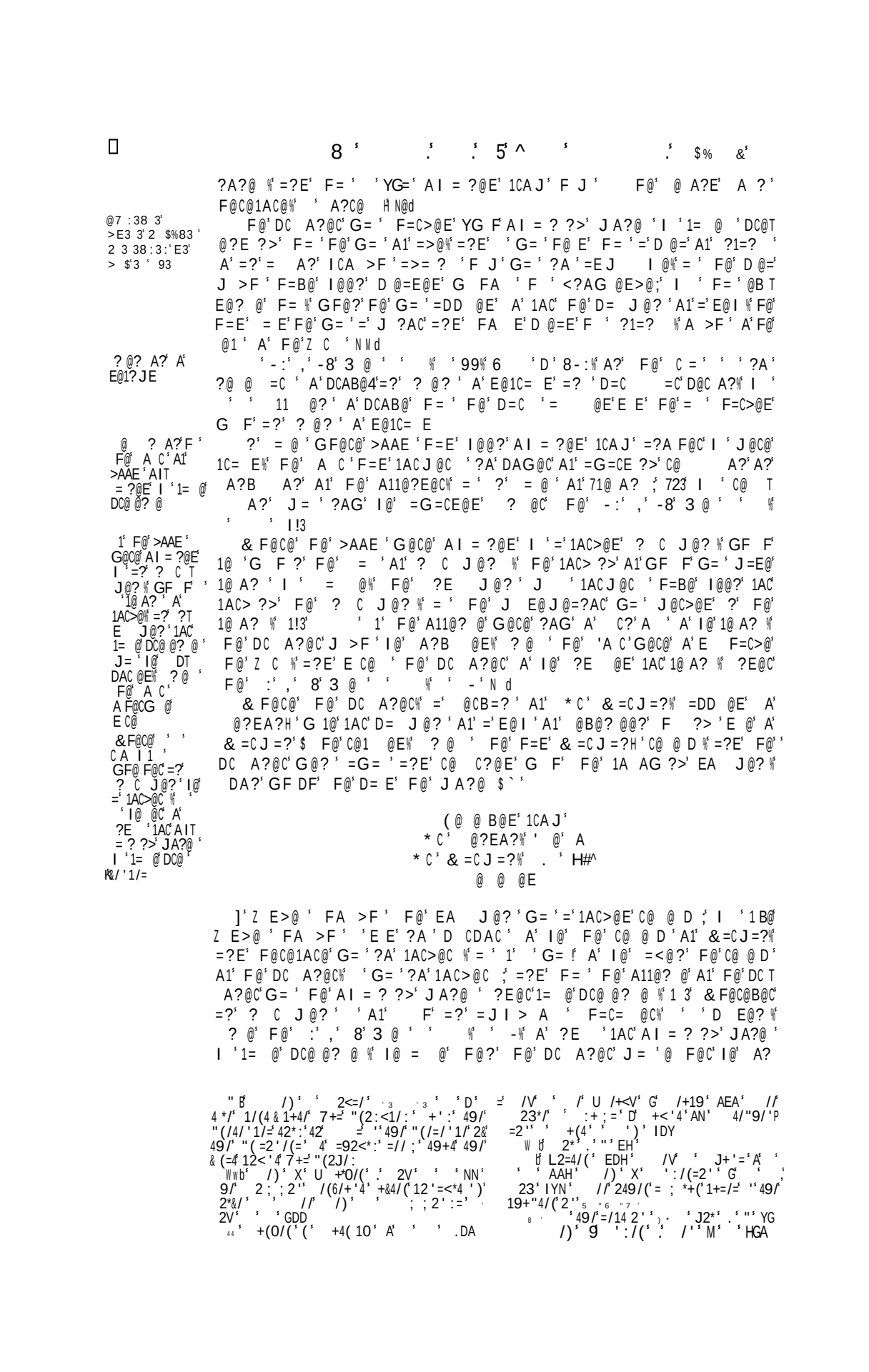

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DC A?@C F=E I@@?' ?@ @ =C A AI = ?' D= J@? = F@ J =< ?>A
=1 C F@C = A ? AC DCAE ?> F@ BA F@C A F@ IA=CE G@
FA E F=B@ FA >F F= F@ AI = ? ?> C@E ? ?= A ? G F F@
C@ @B ?>A11 @C GA E ?A F=B@ I@@?' 11 @? DCA] J = @ A' F@
AI = ? ?> F@ JA?@ = A?' F@ = @J @? ? ?' F@ = @ ?A A F@C
= A?' F@ D=C A1 F@ DC A?@C GA E F=B@ I@@?' C@b C@E &=
F@ = = # E #! 2 4 <!& *' AG=CE F@ D= J @? A1 F@
JA?@ =?E' F@C@1AC@ A >F A ' A? E@C@E' =?' = @JD F@
C@ @D A1 F@ JA?@ =DD@=C A' F=B@ I@@?' DC@B@? @E' I F@ E T
AB@C A1 F@ 1C= E' I F@ C@ @B ?> A11 @C ; =?E' ' B@C J F
F@ =J@ = @ = 1 DDA ?> C@?E@C ?> =?' = A ? A' F@ > =CT
E =? = F@ C A11 @ G F' F@ BA F@C =??@]@E G@C@'=' DC@ J ?=C
?@ @ =C @D A' C@ @B ?> F@ JA?@ F@ DC A?@C F=E' >A?@ A'
F@ A11 @ C@?E@C@E' F@ = A ? =?E' BA F@C =?E' F@?' I@@?' E T
AB@C@E =?E' F@ JA?@ A? @b @? @1 @E HNDd
?' =?' ?E J @?' 1AC = @JD ?> A' AI = ?' JA?@ I 1= @' D @ '+47 ; "4 42'
@? @ ' =DD@=C@E' F= F@ DC A?@C G= ='= A @C =?E' ?' ACE@C' A'
= @C = ?' F@ = JA ? A1 G=>@ A' GF F' @= F' A @C G= @? @E
@= F' A @C A?' >A ?> A' GAC<HG= DD @E' G F' =' @C = ?' ? JI@C 4+** /= ?+
A1 = @ J =C<@E' G F' ? JI@C ACC@ DA?E ?>G F' F= J =C<@E'
=>= ? F ?= J @' ?' F @JD A @CH IAA< ?' @= F' I A1' A=
>A I =' A @C F@ D = @E' A?@' A1' F = @ =?E' F@' I G F' F@
= @ ?' F@J G@C@' @? F C= A' =' =?= =?E' F@C@' @JD @E =?E'
F@' = @ D ?' A?@' I =?E' @?' I= < A' F@' D H' JA F GF@C@'
F@ G@C@' F ?>A?' F@' = IA=CE' AB@C F@' ? JI@C' A?' F= IA=CE'
ACC@ DA?E ?>G F' F@' ? JI@C' A?' F@' = =?E' A' F@G ?> F@'
=JA ? A1' GAC<' 1AC' GF F' @= F' J =?' G= @? @E' A' I@' D= E F@ @'
= @ G@C@' A ? @E =?E' F@' ? JI@C' IAA<@E' A' F@' C@E A1' F@'
A @C F@' DC A?@C' D = @E' FC@@' = @ ?' F@' I A? = ? ?>'
A F@C' = @ GF F' G= Z !=IA A' A' I@' @?' I= < A' F@' D ; I '
GF F' J @=? F@' = @ GA E' ?' E @' A C @' F=B@' I@@?' D = @E' A?

" B /) e +)*/42' /+(=' HDY +' -' -C- 9 +14 2 49 (/* /J ') 2&& 1/(' ; +0 ')' 49 / '4(/= 7+= 49 +14 2 +' ' '21/'4 +)/'4' +' :' "(/1 =/*# 49 =+ ; = 9+:' 3//'' :2' 3# 49 "(P =2' /(' +' :' 49+4)/4= (:' 2 +** 49 :2<34' K&2(79 19' 49/(/ (/+** 7+= 'Z (2<' :' 79+4/J/(&' 49 "(=2' /(9+:' "<4 2' ' '21/'4 +)/'4 ' ; 24 2' ' +' :' +'# '4 ;

9/(2& 249/(' '21/'4 +)/'4= 9+:' 3//'' 49/(/3# "<4 ' ; 24 2' ' /J/(# +14 :2' 72<*:' 9+J 3// '6<=4 49 =+ ; = +=' &' :2' 3# 49 "(=2' /(' = 42 49 "2 '4 <"2 '' 49 : /:<14 2' = 49 = ; "= +' =7/(7+= 49 "(=2' /(; +: 49 +44/ ; "4' +' : 79/49/(9 =<11//:/:' 2('24' 9 7+=)< *4# 2& 49+4 +44/ ; "4 ' ' !

YMY H*'J< 6 ' b ' <''W6 ' N" ' $% &'

F@' = ' IA=CE;' I ' F@ ' G@C@' J J @E = @ ' C@ J AB@E' 1CA J' F@'
I' I ' ='D@C A?' GFA' =G' F@ J ' D ' ?' ' ' G= ' C>@E' F= ' F@C@'
G= ' ?A' DCAA1' A1' =? ' 1= @' DC@ @? @' = = ' J =E@;' =?E' = ' = '
@B@? ' F@' 1= @' DC@ @ @ 'G= ' ?A ' AJD @ @ '! ' ' G= ' F@ E' F= '
F@' 1= ' A? @E' F@' A11@? @' F=C>@E';' F@' D = ?>' A1' F@' = '
?' F@' I' I ' F@' DC A?@C' I@ ?>' =?' = ' EA?@' 1AC' F@' D CDA @' A1'
AI = ? ?>' JA?@ ' GF F' G= ' ?A ' E @' A' F J %' =?E' G F' ? @? ' F= '
F@' D@C A?' GFA @' E ' ' G= ' A' EA' A' FA E' D = @' F@' = @ ! A?'
F@' IA=CE%' GF@C@I ' F@' GA E' F=B@' AI = ?@E' C@E ' 1AC' GAC<' GF F'
I@' I =E' ?A ' EA?@%' N>d ! 44/ ; "4 ')'42'

DA?' =?' ?E J @?' 1AC' = @ J D ?>' A' AI = ?' JA?@ ' I ' 1= @'
2_4+ "' ; 2 ' /# DC@ @? @ %' C @E' = ' F@ ' @? C= ' C J ?= ' A C %' =DD@=C@E' F= '
'-+' :' 3# * @ C ' # ? =?' A1' " @G') AC<%' F@! ACC@ DA?E@? ' A1' F@' ? A?'
&+*=/' "(/4/ ' 1/=' =?<' ?' A?EA?%' G@C@' ?' F@' F=I ' A1' ?>' C =C' @ @C ' A1'
; +: /' +3(2+: C@E ' 1AC' @C = ?' J %' G F' =' ' A1' ACC@ DA?E@? ' ?' E 11@C@?'
D=C ' A1' F@' GAC E%' = FAC K ?>' F@' D@C A?%' A' GFA J' F@' @ @C' A1'
C@E ' G= ' > B@?' A' EC=G' ?' 1=BA C' A1' A?@' A1' FA @' ACC@ DA?E@? '
1AC' F' D=C ' = ' I@' J >F ' C@b C@' A1' F@' D = @E' J' 1AC' GF F'
F@' @ @C' G= ' > B@?' F@' ? A?' =?<' ACC@ DA?E@? %' A?' > B ?>'
= F' A?' F' EC=1 %' G= ' A' ?EAC @' F@' =J A ? ' A?' F@' C =C%' =?E'
GF@?' F@' GFA @' G= ' =EB=? @E%' F@' = ' D@C A?' J =< ?>' =?' =EB=? @'
C@ = ?@E' F@' C =C ' = F' C =C' G= ' ? J I@C@E' G F' =' E '
? 3@' ? J I@C ' F@' DC A?@C' AI = ?@E' =' C =C' 1CA J' * @ C '
? =?' 1AC' - _%' " A ' : %' =?E' F=B ?>' AI = ?@E' E 11@C@?' J ' ?A '
= J A ? ?>' A' - ' ?' ?> =?E%' G@? ' A' ' 5@ @C I C>%' =?E%'
F=B ?>' = @C@E' F@' C =C' I ' =EE ?>' F@' 1 > C@' 8' A' - %' =?E' A'
A?B@C @E' F@' C =C' ? A' A?@' 1AC' 8- %' @]F I @E' ' A' * @ C '
& A?' A1' F= ' D = @%' A?@' A1' F@' 1 CJ ' J @? A?@E' ?' F@' C =C%'
=?E' AI = ?@E' 1CA J' F= ' FA @' @B@C= ' J %' =?E' 1 ?= ' =' J' A1
' =?E' =?A F@C' A1' -8 _%' A?' EC= >F ' 1AC' FA @' = JA ? ' A?'
F@' ? A?' =?<%' EC=G?' I ' F@' DC A?@C' ?' 1=BA C' A1' F@ C' 1 CJ' ?'
A?EA?%' = ' A1' GF F' G@C@' ?EAC @E' A?' F@ ' I= <' A1' F@' C =C'
* @ C ' & A?' 1ACG=CE@E' F@' EC= >F ' A' F@ C' FA @' ?' A?EA?%'
=?E' F@ ' E ' DC@ @? @E' F@' EC=1 ' 1AC' - _' A?' F@' ? A?' =?<%'
=?E' C@b C@E' D= J @? ' A1' ' F@' ? A?' =?<' F=B ?>' I@@?' =EB @E'
A1' F@' C =C' " A ' : ' I ' * @ C ' # ? =?' = ' =' C =C' 1AC' - _'
? %' =?E' A' E AB@C ?>' F@' 1C= E%' C@1 @E' A' D= ' F@' - %' =?E'
F@' DC A?@C%' I@ ?>' =1 @CG=CE ' 1A ?E' ?' ?> =?E%' G= ' =DDC@F@?E@E%'
=?E' F@' ?E J @?' ?' b @ A?' DC@1@CC@E ' 5=C<@%' %' FA >F ' F= '
=' D@C A?%' FA >F' D@C A?= ' =ICA=E%' J >F ' AJ J ' =?' A11@? @' ?'
?> =?E%' =?E' F= ' ' G= ' =' b @ A?' 1AC' F@'Z C ' GF@ @C%' = FA >F'
F@' DC A?@CH ' J J @E = @' AIZ@ ' G= ' A' F@= ' * @ C ' & A?%' F@'
E E' ?A ' = A' J @=?' F= ' F@ 'AC' F@ C' A DA?E@? 'AC' F@' ?EAC @@'
1CA J' F@ J' FA E' DC@ @? ' F@' EC=1 %' =?E' AI = ?' D= J @?' A1' '1CA J'
F@' ? A?' =?<' I ' DC@ @? ?>' ' = ' =' C @' A?@' $ =?E' F@' @1 ' F@'
b @ A?' A' F@' Z C ' GF@ F@C' F@' E E' A' ? @?E%' =?E' F@ ' 1A ?E'
F= ' F@' E E;' I %' DA?' =' = @' C@ @ G@E%' ' G= ' F@ E' F= ' F@' A?'
B AD' A E' ?A ' I@' DDAC @E ' F@' b @ A?' G= ' GF@ F@C%' DT
DA ?>' F@' ? A?' =?<' F=E' FA?A C@E' F@' DC A?@CH' EC=1 ' DA?'
F@ J %' F@' A E' F=B@' I@@?' A?B @E' A1' AI = ? ?>' =? ' F= @

W^d /)' ')3#' D' 2V' ' ' -EG' /+(=' ' ' HDY' ' +' :' /)' &'
+(4 ' ' ' +' :' #*/=' ' 9 =' :/1 = 2 '' 2**27+#' .' /' ' ' 'HDM'
T< 4/' +112(:=' 7 49' /)' &' +)*/42'

J A?@ AC B= =I @ @ C F GA E ?A F=B@ I@@?= =? AI = ? ?>G F ?= F@ J @=? ?>A1 F@ = @GF F A? @J D = @ F@ J A?@ I@ ?>A I = ?@E = ACE ?>A F@ G F =?E 1AC F@ =EB=? =>@AC = = @B@? A >= ?= AJ @AIZ@ A1 F@ D=C GFA J =<@ F@ 1= @ DC@ @? @ @C@ G= ?A A >= ?= =? AIZ@ =?E G= ?A = ACE ?>A F G F @GA E E@C B@ ?A I@?@1 1CA J F@ EC=1 I@ ?>FA?A C@E @ F=E AI = ?@E F 1 AIZ@ = 5@ @C I C>=?E F=E F@ J A?@ ?= F DA <@ A F@ 1 ?E ?>A1 F@ Z C F@ J @C@ J @=? A = F= F@ DC A?@C 1AC@ =G F= F@ EC=1 GA E I@ DC@ @? @E A F@ ? A?= =?<?A F= F@ G F@E NCd

(

8 ^ 5 8

F@ 1@G = @ I GF F?=EE A?= A FA @ GF F F=B@ I@@?= C@=E J @? A?@E? F@= =?E 1C= E =C@ IZ@ @E A D ? FJ @? G ?AG I@ J @? A?@E

F@ K 8? @Ed 7 ?= =>= ? C= E @? #@@E 1 ! C=? @?= A? < (C@ @ 7 F= 1@A11J @? > 1 >C=? = @?= A? A?B@ =? @ IA?E Z E>J @? =?E @]@ A? F=E I@@?= =?E G@C@ E@B @E =?E A? C B@E A1 J = @? 1C= E AB ?A A? AC > @; A F@ @?E D CDA @ =?E ? @? A E@ = F ?E@C AC E@1C= E R!@E AC =?E A F@C A1 F@ C Z =?E =G1 = A? E@I = A ? E=J=>@ D@?= @ 1ACT 1@ C@ I@C A JAC x C @ =?E C@ @1 ; H =?E F@?@?= ?= F@ 1 C D = @ F= 7= =?E @B@C 1@A11J @? > 1 >C=? = @?= A? I=C>= ?= =?E A?B@ =? @ A1 =?E @?@J @? F@C@E =?@? >AAE =?E F= @ AC A1 =? A1 F@J AC A1 =? @= @C@? AJ J A? AC A F@C DCA1 AC F=C>@ A A1 F@ = ?@ =?E @?@J @? F@C@E T =J @? >AAE =?E F= @ AC =? A1 F@J I GC ?>AC A F@CT G @ =?E = =?E @B@C I A?E Z E>J @? =?E @]@ A? F= I@ E@@J @E =?E =<@?; H NA? = =>= ? F= D@C A? I F@ C @]@ AC = >? , GFA @ = A? , I F 1C= E @? E@B @ =?E DC= @ =1AC@ = E F= AC J >F I@ ? =? G= E CI@E E@ = @E AC E@1C= E@E 7 A I@ @=C =?E @C BA E H F@ F CE @ A?@?@?= 7 F= = =?E @B@C F@ D=C @ A F 1@ >?@E AB ?A AC 1C= E @? 1@A11J @? > 1 >C=? = @?= A?; I=C>= ?= A?B@ =? @ IA?E Z E>

.H *O 1 A L2 49/ +J2 :P) &(+<:<*/ '4 12 J/#+ '1/= 6<:) ; / '4= 1 / '+14 49+4 49/ #=9+** 9/ J2 :m

' :' 49+4 49/ "+(4 /4Z 49/ ; =9+** 'P 1<(' +'&2(&/ 4<(/

W(b /) ! +(((/44 /+(= GHG +<*/ 0 9/ 72(:' Z 234+ '' q ; /+' 49/ =+ / +3 49/ 72(:' Z) p4 q '' 4= =/ '=/ 2& Z +1T< (/ q$ +(0/ 0 9/ 72(:' Z 234+ '' q =// ; 42 ; /+ ' ' 24=2 ; <19 :/&(+<:) 2(:/" (J) +' 249/(2& 9 "(2"/(4#' +4 49/' 234+ ') =2 ; / 3/ '/& 4 42 49/ "+(4# $ 2 ' / 2& 49/ 2<(4 :2<34/ :' 49+4 0 &' + ; +' / ; "*2# +' 12 '=1 2<4 2(<'12 '=1 2<4 +)/ '4 '' 49 4 12<' 4(#' 9/ ; +# 3/ + ; / '+3*/ 42 49/ *+7+2&) *+' :' +*492<) 9' +4 49/ 4 ; / 9/ 7+4 * J) 3/P #2 :' 49/ 6<(=: 14 2 ' $ /(2(:' + ; "P 3/** M ' /# +4 42 49 4 "2 '4 /V &' (=+1 ' +=4 .YH 4 4 '2 4+ * 44*/' =) <*+(49+4 4 =/ / ; 4 '/J/(42 9+J/ 21

1<((/ :' 42+ '# 2 ' / 49+4 =<" "2=) +** 49/ &+14 '' 49 4 1+=/ 42 9+J/ 9+" / ' / :) *+ ' : ' 49/ " (=2 ' /(72<*:' 1*/+(*# 9+J/ 3/ '') < *4# 2& 234+ ') 3# &+*=/ "(/P 4/ ' 1/ 49/ ; 2 ' /#9/ (/1/ J/ :'&(2 ; /==(= *=2 ' + ' :' 49+4 ; +0/ +' / ' :' 2& 49 1+=/ <" "2=/ + " /(=2 '' : (/7 +'19/T</ '2 + 3+ ' 0 '' 7 9 19 9/ 9+ :' 2&< ' :=' + ' :' 3# 4 234+ ' / :' &(2 ; + ' =< ; 2& ; 2 ' /# +' :' 49/ 19/T</ +&4/ (7+(:=" +==/ :' 49(2<)9 =/J/ (+* "/(=2 '=9+ ' := /+19 2& 792 ;) +J/ 49/ + ; 2< 4 &2(4 ' 249) ' 1+ ' 3/ 1*/+(/ (49+ '' 49+4 49/ 2&&/ '1/ 72< '3/ 23P 4+ ') 49/ ; 2 ' /# &(2 ; 2 '*# ' ' >

2& +'#/+(S= J+*</' 2& 49/' *+' :=' 1 ? +' :'=<&&/(' (+["(=2' ; / '4 &2(' 2' /' 9+*& #/+(

J @C '@]@ A? '=?E' A F@C' F ?> ' I@1AC@' @]DC@ @E' AC' I@?>' DC B ' =?E' <?AG ?>' A1' F@' =J@' AC' =? ' A1' F@J' GF F' F= ' G ?> ' =?E' G ?> ' D ' ?' C@' =BAG' J = ? = ?' Z 1 ' AC' E@1@?E' F@' =J@' AC' =? ' A1' F@J' = ' C @' JD @' =?E' EA?@' F=E' AC' J =E@' :4 #'*!# ' =?E' DA?' >AAE' A? E@C= A?';' AC' F= ' = @?' AC' = >?' =? ' F@' =?E ' @?@J@? ' >AAE ' @= @ ' AC' A F@C' F ?> ' I@1AC@' J@? A?@E' A' F J' AC' F@J' A?B@ @E' = ' ' =1AC@ = E' AC' =? ' D=C ' F@C@A1' F= ' ? C' F@' D@?= ' =?E' 1AC1@ C@' A1' A?@' @=CH' B= @' A1' F@' = E' =?E ' @?@J@? ' =?E' F@C@E =J@? ' @= @ ' C@? ' AJ JA? ' AC' A F@C' DCA1 ' A1' AC' A ' A1' F@' =J@' =?E' F@' GFA @' B= @' A1' F@' = E' >AAE ' =?E' F= @ ';' =?E' = A' A' J F' JA?@ ' = ' =C@' AC' F= g' I@' A? = ?@E' ?' =? ' F' AB ?A ' =?E' 1@ >?@E' IA?E;' H A?@' JA @ ' A' F@' CAG?' FI' A F@C' A' F@' D=C ' >C @B@E' A' I@' C@ AB@C@E' ?' =? ' A1' F@' W @@?H' A C ' A1' C@ ACE' I ' = A?' , '$ 7=?E' = A' I@ ?>' F@C@A1' =G1 ' A?B @E' F= ' 11@C' JDC A?J@?' 1AC' A?@' F= 1' @=C' G FA ' I= ' AC' J = ?DC @ H1 3'

GD' *a' /' I' (/1 4/=' 49/' ; =19 /& 2& &(+<: '*/'4 +' :' 12J '2<=' 12'P J/#+'1/='

F@' -.' K ' :' C@ @ ' F= ' IZ@ '=?E' ACDAC= A? '7=1 @C' A?B@ =? @ '=?E' D C F= @ 'A1' =?E ' @?@J@? ' @= @ ' @ = @ ' =?E' F@C@E =J@? ' 1AC' JA?@ ' AC' A F@C'>AAE' A? E@C= A? ' J= 'F=B@' ? C'=?E' C@ @B@'>C@= ' A '=?E' DC@Z E @' I 'C@= A?' A1' 1C= E @?' =?E' AB ?A ' A?B@ =? @ ' @ = @ ' > 1 ' >C=? ' F=C>@ ' =?E' J = A? 'A1' @ 'F@C@ A1AC@' J=E@' AC' F@C@=1 @C' A' I@' J=E@' A1' ?' AC' A 'A1' =?E ' @?@J@? ' AC' F@C@E =J@? ' A'D C F= @E' AC' A' I@' D C F= @E;' GF F' = E' > 1 ' >C=? ' F=?>@ ' @ = @ ' @ ' =?E' A?B@ =? @ 'G@C@' AC' F@C@=1 @C' F= ' I@' J@=? ' AC' ? @?E@E' I ' F@' D=C @ ' F= ' A' J =<@' F@' =J@' A' I@' 1C= E @?'=?E' AB ?A ' A1' D CDA @' =?E' ? @? ' A' E@ @ B@' F' = ' F=B@' D C F= @E' AC' F= ' D C F= @' F@' =J@,' AC' @ @' I ' F@' @ C@' ? @? 'A1' F@' D=C @ ' F@' =J@' I@' A' F@ C'AG?' DCAD@C' @' =?E' = ' F@ C'1C@@' E DA A? A A C@E' ?@B@C F@ @ ' I ' =' 1@ >?@E' A ? @?=? @' =?E' F@G' A1' GACE '=?E' @? @? @ ' = ' FA >F' F@' =J@' G@C@' J=E@' <4"!#'*!# '1AC' >AAE' = @ '=?E' DA?'Z '=?E' =G1 ' A? E@C= A? H F@' @ A?E' @ A?' F@?'@?= '7 F= ' = '=?E' @'B@C ' A?B@ =? @' > =? ' F=C>@' @= @' @ = @' ? J IC=? @' =?E' J = A?!A1' @' AC' @ 'A1' ?' AC' A ' A1' =? ' =?E ' @?@J@? ' AC' A F@C' F@C@E =J@? ' GF= A@B@C' F=E' ?C' J=E@'1AC' F@' ? @? '=?E' D CDA @' A' E@1C= E' =?E' E@ @B@' F' D@C A?' AC' D@C A? ' IAE @ ' DA ' AC' ACDAC= @' = ' F=B@' D CT F= @E' AC' F= '=1 @CG=CE 'D C F= @' ?'1@@' JD @' 1@@' = '1AC' 1@' B@ ' AC' @=C ' F@' =J@' =?E ' @?@J@? ' =?E' F@C@E =J@? ' AC' =? 'D=C ' AC' D=C@E' F@C@A1' A' 1AC J@C ' A?B@ @E' >C=? @E' @= @E' F=C>@E' ? J I@C@E' AC' J @E' ?' @' AC' A' E@1C= E' =?E' E@ @B@' F' = ' F=B@' AC' F= ' D C F= @' =? 'C@D ' DCA1 ' AC' AJ JAE ' ?' AC' A 'A1' F@' =J@' AC' =? 'D=C ' F@C@A1' F= ' I@' E@@J@E' =?E' =<@?' NA? ' = ' =>= ? ' F= 'D@C A?' IAE 'DA ' , ' F@ C' F@C ' @T AC ' @]@ AC ' , ' =?E' D@C A? ' =G1 ' = J ?>' ?E@C' F@J' GF F' A'D C F= @'1AC' JA?@ 'AC' A F@C'>AAE' A? E@C= A?' F@' =J@' =?E ' , %d' 7A' I@' @C ' BA E H ?E' F@' F CE' @ A?' @?= ' 7 F= ' = '=?E' @B@C ' F@' D=C @ ' A' F' 1@ >?@E' AB ?A ' =?E' 1C= T E @?' > 1 ' >C=? ' @= @ ' F=C>@ ' AC' A?B@ =? @ ' I@1AC@''@]

' :' 49+4' 49/' "+(4 /=' 42' =<19' 12'J/#+'1/=' 792' +J27' 49/

W H /' ;' 9 44#-=' 4+4<4/='HEA' &2('49/' ')E-' +(4 ' :+*/' &' 2249' H ' ' 1+=/=' :/1 :/:' 2'' 49 =' =4+4<4/' 42' 79 19' :')E1' 27/''&' (+; :)/' Y ' ' ' ; +#' 3/' +: :/:' 9/+(=' &' 2)/(=' H' ' ' C)E ' <419/(' &' +((=2' ' ' ' ' ' :' :' HYG' !+*/' &' ** + ; =2' ' 1' W' .GN

= E' A C' F= 'Z E>@'DCAD@C'= ACE ?>' A' F@' C J =? @ 'A1' F@'
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@ ' ' 7 B@C ' D@C A?' GFA' G F' ? @? ' A' E@1C= E' AC' A' @?=I @' =?A F@C' A' E@1C= E' =? ' D@C A?' ! F= ' =DD ' AC' = @' AC' DCA C@' A' I@' =DD @E' =? ' C=E@' J =C<' AC' =? ' 1AC>@E' AC' A ? @C1@ @E' C=E@' J =C<' A' =? ' = <' IA @' ADD@C' B@ @ ' = @' AB@C' GC=DD@C' I=?E' C@@ ' <@ ' =I@ ' AC' A F @C' F ?>' ?' A?' AC' G F' GF F' =? ' F= @ ' AC' =C @' F= ' I@' ? @?E@E' A' I@' A E' AC' F= ' I@' A E' AC' @C@E' AC' @]DA @E' 1AC' = @' AC' ? @?E@E' 1AC' =? ' D CDA @' A1' C=E@' AC' J =? 1= C@' AC' F= ' @? A @' AC' D = @' =? ' F= @ ' AC' =C @' AC' = @' AC' DCA C@' =? ' F= @ ' AC' =C @' A' I@' @? A @E' AC' D = @E' ?' DA?' ?E@C' AC' G F' =? ' = <' IA @' ADD@C' B@ @ ' = @' AB@C' GC=DD@C' I=?E' C@@ ' <@ ' =I@ ' AC' A F@C' F ?>' A' GF F' =? ' C=E@' J =C<' F= ' F=B@' I@@?' 1= @ ' =DD @E' AC' A' GF F' =? ' 1AC>@E' AC' A ? @C1@ @E' C=E@' < =C<' F= ' F=B@' I@@?' =DD @E' AC' F= ' =DD ' AC' = F' AC' = @' AC' DCA C@' A' I@' =DD @E' AC' = = F@E' A' =? ' F= @ ' AC' =C @' =? ' = @' AB@C' C@@ ' <@ ' =I@ ' AC' A F@C' F ?>' A' GF F' =? ' C=E@' J =C<' F= ' F=B@' I@@?' 1= @ ' =DD @E' AC' A' GF F' =? ' 1AC>@E' AC' A ? @C1@ @E' C=E@' J =C<' F= ' F=B@' I@@?' =DD @E' AC' F= ' @? A @' D = @' AC' = = F' =? ' F= @ ' AC' =C @' AC' = @' AC' DCA C@' =? ' F= @ ' AC' =C @' A' I@' @? A @E' D = @E' AC' = = F@E' ?' DA?' ?E@C' G F' AC' A' =? ' = <' IA @' ADD@C' B@ @ ' = @' AB@C' GC=DD@C' I=?E' C@@ ' <@ ' =I@ ' AC' A F@C' F ?>' F=B ?>' @C@A?' =? ' C=E@' J =C<' A1' =? ' A F@C' D@C A?' F= ' I@' > ' A1' =' J E@ J @=?AC' =?E' @B@C ' D@C A?' A' A J J ?>' =' J E@ J @=?AC' F= ' = A' 1AC1@ ' A' F@C' * =Z@ ' @B@C ' F' F= @ ' =?E' =C @' =?E' = A' @B@C ' F' = <' IA @' ADD@C' B@ @ ' = @' AB@C' GC=DD@C' I=?E' C@@ ' <@ ' =I@ ' AC' A F@C' F ?>' = ' =1AC@ = E' ?' F@' DA @ A?' AC' DAG@C' A1' F' D@C A ;' =?E' @B@CvH A F@C' J =C' = <' IA @' ADD@C' B@ @ ' @= @' AB@C' GC=DD@C' I=?E' C@@ ' <@ ' =I@ ' AC' A F@C' F ?>' J =E@' A' I@' @E' ?' <@' J =??@C' = ' =1AC@ = E' =?E' @B@C ' ? C J @? ' ?' F@' DA @ A?' AC' DAG@C' A1' F' D@C A?' =?E' I ' J @=? ' A1' GF F' =? ' F' C=E@' J =C<' AC' 1AC>@E' AC' A ? @C1@ @E' C=E@' J =C<' = ' =1AC@ = E' F= ' F=B@' I@@?' =DD @E' =?E' = A' @B@C ' ? C J @? ' ?' F@' DA @ A?' AC' DAG@C' A1' F' D@C A?' 1AC' =DD ?>' =? ' F' C=E@' J =C<' AC' 1AC>@E' AC' A ? @C1@ ' C=E@' J =C<' = ' =1AC@ = E' F= ' I@' 1AC1@ @E' A' F@C' * =Z@ ' =?E' F@' A C ' I@1AC@' GF F' =? ' F' J E@ J @=?AC' F= ' I@' C @E' 1 = ' ACE@C' F' 1AC1@ @E' =C @ ' = ' =1AC@ = E' A' I@' E@ CA @E' AC' A F@CG @' E DA @E' A1' = ' F' A C ' F= ' F ?<' 1 H 1?3

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3/' :/=4(2#/:' +':' :+#')(+'4+'' '6<'1P "/**/:'42') J-'=/1<(4#'&2(' 12=4=
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' 9' ,' ' 3 @ ' ' 9.' N F@' =?E' C=? 1@C % 9.8d% ' % ! 1' +':' (+'=&/(?' F@' A C @' A1'=? ' DCA @@E ?> ' I@1AC@' F@' C@> C=C% AC' F@' A C % 14' .EDA ?' D C =? @' A1' F ' %=? 'D@C A?' A? @C?@E' ?' F' DCA @@E ?> ' = ' D ! ? D= ' AC'=>@? % G F' ? @?' A' A? @=' F>' @' AC' = J' A1' =? ' D@C A?% AC' A' I =? = @'=' 1= @' = C=%' DDC@ @ % = @ J D ' A' DDC@ % AC' ' DC B W' A' F@' DDC@ A?' A1'=? ' EA J @?' AC' A1' =? ' 1= % F@' D@C A?' A' DDC@ ?>% = @ J D ?>' A' DDC@ % AC' DC B ' A' DDC@ A?% F= ' I@' > ' A1'=' J E@ J @=?AC% =?E' DA?' A?B A?' A?' ?E J @?' F= ' I@' F=I @' A' I@' J DC A?@E' 1AC' =' @C J ' ?A ' @]T @@E ?>' GA' @=C %G F' AC' G F^Z ' F=CE' =IA C% AC' A' I@' 1 ?@E' F' J ' ?A ' @] @@E ?>' 1 B@' F ?EC@E' DA ?E ' = ' F@' A C ' I@1AC@' GF F' F@' ' C @E' J = ' =G=CE H

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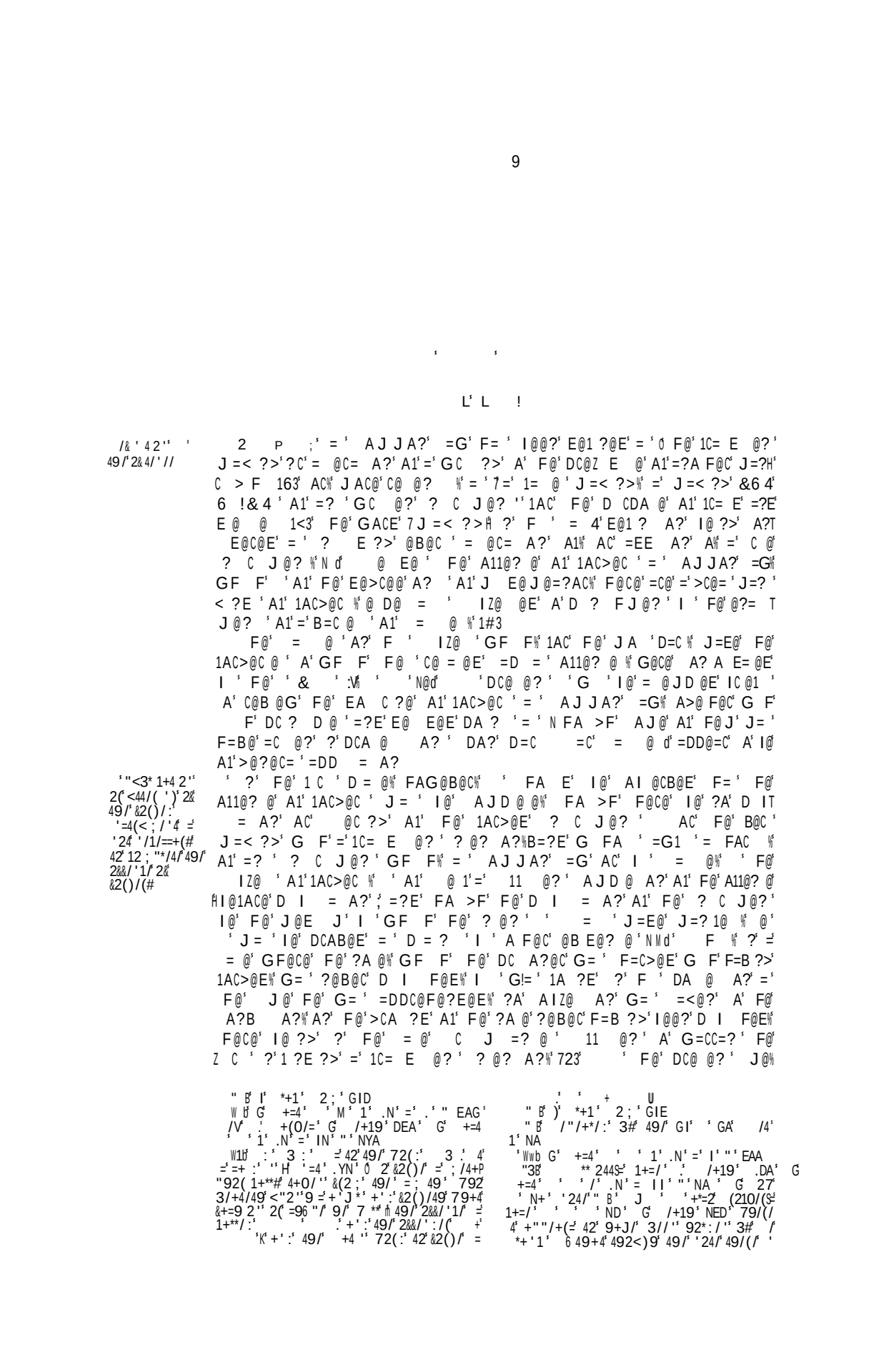

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?' =?' ?E J @? ' 1AC' 1AC> ?>' =!' F@b @' ' =DD@=C@E' F= ' F@' DC A?@C' G= ' @C<' A' * @ C ' @G@ ' =?E' CA %' =?E' F=E' I@@?' ?' F@' F=I ' A1' >@ ?>' I =?<' F@b @ ' >?@E' I ' F@' 1 CJ%' =?E' 1 ?>' ?' F@' = J A ? ' F J @ 1' A' J @@ ' F@' E@ J =?E ' A?!' Fu' 1 CJ ' @' ICA >F ' F@' F@b @' ?' b @ A?' A' A?@' A1' F@' D=C ?@C ' =?E' = <@E' F J' A' >?' %' = ?>' F= ' * C' @G@ ' F=E' A E' F J' A' D= ' @C = ?' C@? ' E @' 1CA J' * C' @G@ ' A' * C' =CE ?@C%' I ' F= ' F@' = J A ?' G= ' ?A ' = @C = ?@E ' 1 F@' F@b @' GF@?' A J D @ @E' G= ' =' 1A AG '$`

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G(: ' ' 2 S

' F@' IA A J' G= ' GC @1 %' 15= ' ?' ?A @ ;H I ' ?@ F@C' F %' ?AC' F@' E= @%' ?AC' F@' = J A ? ' G= ' 1 @E' ?' GF@?' ' G= ' >?@E' I ' F@' D=C ?@C%' GFA' >=B@' F@' DC A?@C' ?A' = FAC ' A' C@ @ B@' = F' 1AC' F@' F@b @' AC' A' =DDCADC = @' ' A F@CG @' F=?' 1AC' F@' C@? $ F@' DC A?@C' C@ @ B@E' F@' = J A ? %' =?E' F@' ?A @ ' G@C@' C= @E' A' D=C @ ' A' GFA J' F@' DC A?@C' F=E' D= E' F@ J' A?' = A ?' A1' >= J ?>' E@I ' A1' F ' AG?' F@' C@? ' E @' A' =CE ?@C' G= ' J F' J AC@' F=?' ' " @ F@C' @G@ ' ?AC' =CE ?@C' G= ' = @E' ' G= ' AIZ@ @E' F= ' F@' DC A?@C' F=E' = FAC ' A' 1 ' ?' =' =C>@C' J' F=?' F@' F=E' ? @C @E%' =?E' F@C@1AC@' G= ' ?A ' > ' A1' 1AC>@C %' =?E' F= ' ?A' I @b @?' E DA = ' A1' F@' DCAD@C ' A E' J =<@' F= ' 1AC>@C %' GF F' G= ' ?A ' A' = ' F@' J @' F@' F@b @' G= ' AJD @ @E' ?E' F= ' @G@ ' J >F ' F=B@' > B@?' E C@ A? ' GF F' F@' DC A?@C' F=E' AI@ @E;' AC' F= ' F@' C@? ' J >F ' F=B@' I@@?' D= E' =C @%' %' 1 ' F ?<' F@' DC A?@C' J ' I@' = b @E' ' ' @=C' F= ' F@' F=E' = FAC ' A' 1 ' D' F@' F@b @' ?' AJ@' G= ' AC' =?A F@C%' =?E' F= ' = FAC ' G= ' E@T C B@E' 1CA J' @G@ %' =?E' F@C@' ' ?A' @B E@? @' A' FAG' F= ' F ' E C@ A? ' G@C@' ?A ' A' > @ ' =' I =?<' F@b @' 1 @E' D' 1AC' %' =?E' =DDCADC = @' ' = ' ' F= ' I@@?' * AC@AB@C%' ' FA E' F=B@' I@@?' F@G?' F= ' =CE ?@C' E E' ?A ' = FAC K@' F J' A' C@ @ B@' F@' J A?@ H 4' 4' 4' ' AJ@' EA I ' @@J@E' A' @] ' = ' A' I@' =G' ?' = @ ' A1' F ' AC %' C @%' %' =EE@E%' 1 1' =' F@b @' ' > B@?' A' =' D@CT A?' G F' =' @C = ?' = FAC %' F@' =>@? ' ' A?1 ?@E' C ' G F ?' F@' J ' A1' F= ' = FAC %' =?E' 1' F@' FAA @' A' = @C' ' I@' C J @' A1' 1AC>@C ' ' AJ J @E ' 1' F@' I =?<' F@b @' G= ' E@ B@C@E' A' F J' G F' =' J @E' = FAC ' A' AJD @ @' %' =?E' F@' 1 @E'

WJb' /) ' . ' ! (&& 49=' ' ' ' AIE' 4' IEY' ' ' D' ' ' ' YAG

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D G F =? =J A ? E 11@C@? 1CAJ F@ A?@ F@ G= E C@ @E A ? @C AC 1 =1 @C F@ = FAC G= = =? @?E FA 1 @E D G F =? =J A ? GF= @B@C F= GA E @=C I@ 1AC>@C 5= @ A? 7 b @ =>C@@ G F J @=C?@E ICA F@C F= 1 F@ DC A?@C 1 @E D F@ F@b @ G F =E 11@C@? =J A ? =?E 1AC E 11@C@? D CDA @ F=?> FA @ GF F F = FAC G=CC=? @E F@ C J @ A 1AC>@C GA E I@ J=E@ A HN d

F@ ?E J @? F=C>@E F@ DC A?@C G F 1AC> ?> =G=CC=? =?E ACE@C1AC F@ D= J @? A1 JA?@ GF F G= = 1A AG ; `

Y 7F A 7 B@CDAA ' # @ 9 F 9 : . 7 A F@ = F @C A1 F@ B@CDAA ACA >F =?< AC I@=C@C 7 5= GA F ?EC@E =?E 1 1 DA ?E 8 # F 2 7 -8 FH

F@ DC A?@C G= @C< :A AF?! A I 1AC 8 E 1= ?> E @ A? F@ 9 F A1 # @ @J I@C * C = AD F= E= >?@E =I =?< F@b @ =?E >=B@ A F@ DC A?@C E Cu ?> F J A 1 F@ F@b @ D G F F@ ACC@ =J A ? E @ A? F@ I NGF F G= A I@ = @C = ?@E I C@1@C@? @ A F@ I IAA<d =?E F@ @]D@? @ NGF F GA E =J A ? A =IA @?> F ?> d =?E =1 @C C@ @ B ?> F@ =J A ? = F@ B@CDAA ACA >F =?< A D= AB@C A =* C & =J A? ?> ACE@C F= F@ I J >F I@ =<@?> D ? @=E A1 EA ?> A F@ DC A?@C 1 @E D F@ F@b @ G F F@ =J A ? A1 -8 _ GF F J F@ J ?=@E = @ C@ @ B@E = F@ I=?< =?E G FA D= ?> =? D=C A1 F@ J A?@ AB@C A * C & =J A? C@ = ?@E F@ GFA @ A1 ?> F DA @ A? ?> = 1= A? A1 = = J 1AC = =C GF F F@ = @>@E A I@ E @ A F J =?E> ?> DDAC A1 GF F F@ >=B@ AJ @ @B E@? @ I GF F F J = @C @? C@ E@? @E A I@ E @ ?> F@ E= =1 @C F@ C@ @ D A1 F@ JA?@ A? F@ F@b @ F@ @? ?> =? = A ? A1 F = J > B ?> F J = @C C@E 1AC F@ J C@ @ B@E A? F@ F@b @ G= A IZ@ @E F= = F@ >?= C@ A F@ F@b @ G= F@ Y >@? ?@ >?= C@ A1 8C * =?E = F@ DC A?@C G= ? 1 @E A 1 D 1AC = D@ 1 @E J F@ 1 ?> D 1AC = E 11@C@? J FA >F G= = IC@= F A1 C G= ?A = =1AC>@C ; I A C?=? F@ E F= G= =1AC>@C G= 1 C F@C C>@E F= F@C@ G= ?A DCAA1 A1 =? ? @? A? A E@1C= E * C * I A? A AI = ?1CAJ F J = J A1 JA?@ GF F F@ DC A?@C J >F FA?@ I@ @B@ A I@ E @ A F J & F C@1@C@? @ A F DA ? A J =? A E F@ Z C F= 1 F@ G@C@ = 1 @E M F= F@ DC A?@C G= = FAC K@E A? A 1 D F@ F@b @ 1AC F@ =J A ? A1 F@ I =?E @]D@? @ =?E A D= F@ DCA @@E A & =J b? =?E F= F@ 1 @E D 1AC = =C>@C J =?E =DD @E F@ JA?@ GF@? C@ @ B@E A F AG? D CDA @ F= G= @B E@? @ A1 =? ? @? A? A E@1C= E * C * F@ Z C A?B @E =?E DA? = @ C@ @CB@E A J =? = E 7 F= F@ F=E 1@ AJ @ EA I GF@ F@C F@ b @ A? A1 F@ C@= A1 F@ DC A?@CH = J A >F ?A A F=B@ I@@? @1 A F@ Z C F@ =?E = F@ Z E>@ =>C@@E F= GF@ F@C F@ F=E = J AC ?A F@C@ G= ?A F=EAG A1 = FAC F@C@I > B@? A EC=G = F@b @ 1AC = =C>@C J F=?!

F ' J = @C' F=E' @]DC@ '= FAC K@E;' = E' F@' EC=G ?>' =' F@b @' A' =' =C>@C' =JA ?' 1C= E @? 'G=' 1AC>@C %' A?' F@' = FAC 'A1' - ?' ' = 6" P 183

')/''/(+* +<492(4#42' :(+7'19/T</=

?' =?' ?E J@?'1AC'1AC>@C ' '=DD@=C@E' F=' F@' DC A?@C' F=E' F@' J =?=>@J@?' A1' F@'DCA @ AC H I ?@ %' GFA' F=E' =?' = A ?' G F' *@ C ' C?@ %' A' GF F' ' G=' F ' E ' A' D=' = ' J ' ?A ' ?@ @ =C ' 1AC' F@' CC@?' @]D@? @ ' A1' F@' A? @C?;' =?E' A?' F= ' = A ?' F@' DC A?@C' G= ' = FAC K@E' A' EC=G' GF@?' F@' = F' ?' F=?E' G= ' ?A ' 11 @?' A' J@@ ' FA @' @]D@? @ ' ?' EA ?>' F ' F@' DC A?@C%' G F' F@' =? A?' A1' F@' DCA @ AC %' E E' ?A ' = G= ' EC=G' ?' 1=BA C' A1' =' D=C =C' C@E AC' 1AC' F@' @]= ' =JA ?' E @' A' F J%' I ' EC@G' ?' F ' AG?' 1=BA C' F' J ' =' F@' C@b C@E%' AC' G= ' DDA @E' A' C@b C@%' 1AC' F ' E I C @? @? %' =?E' D= E' F@' C@E AC ' A ' A1' ' @' G= ' ?E @E' 1AC' F=B ?>' 1AC>@E' =' F@b @%' GF F' F@' F=E' EC=G?' 1AC' ' %' =?E' @? @C@E' ?' F@' DCA @ AC H IAA< ' = ' F=B ?>' I@@?' D= E' A' F@' ' ' (' A ;' I ' GF F' F@' F=E' D= E' A' F ' =?E ACE' 1AC' F ' AG?' C@? ' & =J %' %' F@ E' F= ' F@' DC A?@C' J ' I@' = b @E ' F@C@' G= ' =' E ? A?' I@ G@@?' = @ ' GF@C@' F@C@' G= ' =?' = FAC ' A' 1 ' D' = ' I ' A' =' J @E' =JA ? %' = ' ?' - ?' B' = 6" '163' =?E' GF@C@' F@C@' G= ' =' >@?@C=' = FAC ' A' EC=G' F@C@' &=' ?A' EA I ' ?' F ' = @' =' E C@ A?' B@ @E' ?' F@' DC A?@C' A' EC=G' F@b @ %' =?E' A' C@= @' =' I= =? @' ?' F ' F=?E ' A' J@@ ' F@' E@J=?E ' J=E@' A?' F@' 1 CJ ;' F@' DC A?@C%' F@C@1AC@%' E E' ?A ' ?@ @ =C ZC' @] @@E' F ' = FAC ' ?' EC=G ?>' 1AC' F ' =JA ?%' =?E' F@' C ? ?=' = ' G=' C= F@C' F@' I @b @?' =DDCADC = A?' A1' ' N d

' 9*#2& /V] 19+')/' ;V=4 3/'12 ; "*/4/'+4' 49/'4 ; /'+'' +11/"4+'1/' =' 7(44/''2'' 4' 2(' 4' =' '2'4' +' &2()/(# 2&49/' +11/"4/'1/

'GF@C@' F@' ? C J@?' ' JD@C1@ '=' =' F %' GF@?' F@' ?=J@' A1' =?A F@C' 'GC @?' DA?' %' ' '?A'=' 1AC>@C 'A1' F@'= @D =? @' DA?' =?' ?E J@?' 1AC' 1AC> ?>' =?E' @C ?>' =' 1AC>@E' = @D =? @' A1' =' I ' A1' @] F=?>@%' =?' = AJD @' DCAB@E' F= ' F@' DC A?@C' DCAT E @E' =' I =?<' =JD' 1CAJ' F 'DA <@ %' =?E' GCA @' F@' ?=J@ '7 11' =?E' J 'H= CA ' %' =?E' F@?' >=B@' ' A' F@' G ?@ %' GFA' GA' E= ' =1 @C' ?' F@' =I @? @' A1' F@' DC A?@C' EC@G' F@' I '1AC' _' A?' F@' =JD%' 5= @ A?%' %' EA I @E' GF@ F@C' F@' F=C>@' A1' 1AC>@C ' A E' I@' DDAC @E';' I@ = @' = ' F@' J@' GF@?' F@' ?=J@ '7 11' =?E' J 'H G@C@' GC @?' A?' F@' =JD' I ' F@' DC A?@C%' 'G=' =' I =?<' D=D@C%' N d ?E' GF@C@' F@' DC A?@C' G=' ?E @E' 1AC' 1AC> ?>' =?' = @D =? @' A1' =' I ' A1' @] F=?>@%' =?E' '=DD@=C@E' F=' = ' F@' J@' GF@?' F@' DC A?@C' = @E' =' =E' A' GC @' F@' ?=J@' A1' 7 AF?' F=DJ=?'H= CA ' F@' I %' = ' F@' = @D AC' F@C@A1'NGF F' F@' =E' ??A @? 'E Ed%' =' I =?<' G= ' @1 ' ?' F@' I '1AC' F@' EC=G@CH' ?=J@;' 5=C<@%' %' F@ E' F= ' F@' ?E J@?' G= ' ?A ' DDAC @E%' = ' F@' ? C J@?%' A' GF F' F@' 1AC>@E' = @D =? @' G= ' =11]@E%' G= ' ?A %%' = ' F@' J@' A1' F' DDA @E' 1AC>@C %' =' I ' A1' @] F=?>@%' F@C@' I@ ?>' ?A' EC=G@CH' ?=J@' ' ACE F D' C@1@CC@E' A' F@' @CJ ' A1' ;F@' ' & ' :%' ' %' ' :%' GF F' EA' ?A ' J =<@' ' 1AC>@C ' J@C@ ' ;A' A ? @C1@ ' =?' = @D =? @%' I ' =?' = @D =? @' A1' =' I ' A1'] F=?>@' NEd

W=b' /)' ' *=2'' ;' /'' ' 'GE ' (G' ' .EID R B' 1;3 /)' ,' 19+(:=2'' G' L' ,' 'HI+ .EYM W1b' /)' ' 220/' E' ' ' 'AEG' =' (:=9 '" :' :' '24'49 'O'49/'"2 '4' ; +4/(+* 3/1+<=/'49/'"(=2'/('9+:' <44/(/:'49/'3 *# +&4/(' 4' 7+=' 12 ; "*/4/:' +':' +=' 9/' 7(24/' 49/' '+ ; /=' 2'' 4' 9/' ; <=4'9+J/'0'27 ''49/' +11/"4+'1/'42' 3/' +'&2()/(# "B' /)' 2' '44/(7 10' G' ' ' 23' .NY' 2=/' (' J' IDI' 9/3 *# 79/'' "(2:<1/:'9+:'<"2'' 4'49/'' '+ ; /=' 0 *=423

F@' @] D ?> ?>%' F ' J @=? ' A1' @ J A?' Z @' N = E' ?' F@' ?E J @ ? ' V"<') ')' + '' A' F@' =' @C = ?' b AC' ?<?AG?' A' F@' Z C d%' =?' ?EAC @ J @ ? ' A?' =' ' :2(=/ ; /' 4 F=?<' ?A @' G= ' FA E@?' A' F@' =' "6! ! 2' A1' F@' ?EAC @ J @ ? ' G ?' 2 '' +' 3+ ' Ø F@' 9' , ' ' & ' %' ' - %' ' N?AG' C@D@= @Ed%' GF F' C@ = @E' A' F@' '24/
= @C ?>' A ' C= ?>' =? ' ?EAC @ J @ ? ' A?' =? ' F=?<' I %' , ' N@d

?' =' = @' GF@C@' F@' DC A?@C' DCA C@E' =' E@@E' A' I@' 1AC>@E%' = ' L2( ) /(# + ' :' 1CA J' A?@' ' * ' =?E' F ' A?%' A?B@ ?>' =' @C = ?' @ = @' 1AC' 1@' A =<3=/T</ ' 4 * ' 6 ;' =?E;' =1 @C' F@' E@= F' A1' A?@' A1' F@' DDA @E' >C=? AC %' F=E' +*4/ (+4 2 '' 2& +' DCA C@E' F@' 1AC>@E' E@@E' A' F@' = @C@E' I ' @? =C> ?>' F@' >C=? @@H' :/ / :
@ = @' A' =' 1@@' ;' =?E' G= '?A?B @E' A1' 1AC> ?>' =?E' @C ?>' ' ?' F@'
= @' A' GF F' ' G= ' A' = @C@E;' F ' G= ' FA ED?' A' I@' G@ ' I '
= ' F@' Z E>@ ;' = ' I @ ?>' ?A' @ ' =' 1AC>@C ' ' 1 @C' F=?' I @1AC@' F'
= @C= A? ' N Wd' H

' @@ J ' F= ' =' J =?' =??A ' I @' > ' A1' 1AC>@ ' I ' =' F=C@' 4 ' =' 42' &2( ) /(# 3# &(+<:<' /' 4
* 6 6 G' = ' 1%' ?' EC=G ?>' =' G %' F@' FA E' A J ' =' @>= ' GF F' 2 ; = 2 '' '' +' F@' G= ' E C@ @E' A' ? @C $ I ' ' =DD@=C ' A' F=B@' I@@?' FA E@?' F= ' 7 (44/ '' '=4(<P
1' F@' A J A?' A1' =' I @b @ ' b' A?@' = @' =' J = @C = ' = @C= A?' ?' ;) ' 4
F@' J = A?' A1' =' I @b @ ' A' =?A F@C%' = ' GF@C@' F@' A J A?' A1' =' E@B @' A1' =?' @ = @' 1AC' 1@' A' A?@' J =?' = @ ' =' E@B @' A1' F@' = J @'
=?E ' A' =?A F@C' A' D= ' =' DC@ @?' @ = @%' GF F' A F@CG @' GA E'
F=B@' D= @E' =' C@ J = ?E@C' A? %' F@' D@C A?' J =< ?>' F' =?' A J A?'
' > ' A1' 1AC>@ ' 123

DA?' =?' ?E J @ ? ' 1AC' 1AC> ?>' =' @= @' =?E' C@ @= @%' ' =DD@=C@E' 4' =' '24
F= ' = ?> ' G= ' =' 1C@ @ J =?' A1' # CF= J %' @? @E' A' F@' 1C@@FA E' &2( ) /(# &(+<P
DCAD@C ' E@ C I @E' ?' F@' E@@E %' =?E' A E' ?@ F@C' C@=E' ?AC' GC @' : <' /' 4' #' 42' /V/1<4/'
F@' DC A?@C' G@? ' A' F ' AE> ?> %' =?E' = E' F@' F=E' A J @' A' = <' =2 '' 42' /V/1<4/'
F J ' 1AC' F ' BA @%' =?E' F=E' I CA >F ' F J ' =' C@b A?' A' >?' 1AC' + '' ' =4(< ; / ' 4
F@' D CDA @' A1' IC ?> C ' >' =?A F@C' GF >' =?E E= @' 1ACG=CE ' F@' 2 '' +' ; =(/P
DC A?@C' = E' F@' GA' E@@E ' A?' F@' =I @%' =?E' = <@E' = ?> ' A' "(/=/ ' 4+4 2 '' 2&
>?' F@ J ' ;' F@' = E' F@' A E%' ?A ' GC @%' I ' GA E' D ' F ' J =C<%' 4=12 ' 4/ ' 4=' 3<4' 4' =
=?E' E E' = ACE ?> ' D ' F ' J =C<%= ' F@' 1AA ' A1' F@' GA' E@@E $ &2( ) /(# 4Z' "<4
?A F ?>' G= ' = E' ?' F@' DC@ @? @' A1' = ?> ' =I A ' E@ B@C ?>' F@' +' =/+' 4Z' +' : / / :' +&4/(' 4
E@@E ;' I ' F@C@' G= ' A? C=E AC ' @B E@? @!= ' A' F@C@' I @ ?>%' 9+=' 3/ / '' =) ' / :
@= ' A?' F@' E@@E ' = ' F@' J @' = ?> ' J =E@' F ' J =C< ' AC' F@'
DCA @ A?%' -' (' ' , ; * ' %' -' # @= ' ' ' : -%' G@C@' @E'
(A 1@%' %' = E' F@' A E' I ' ?A' J @=? ' I C I @' A' F@' = FAC ' A1'
F@' = @ ' @E' I ' (@ ' =?E' # @= A?%' =?E' @] DC@ @E' =' @=C'
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F=E' I @@?' =11] @E' DC@B A ' A' F@' J =C<' A1' = ?> ' I @ ?>' A I = ?@E%'
=?E' F= ' F@ ' G@C@' A?' F@' E@@E ' GF@?' F@' D ' F ' J =C<%' F@'
DC A?@C' G= ' @? @E' A' I @' = b @E%' FA >F' =I @' A' =?' ?E T
J @ ? ' 1AC' =' B@C ' >CA ' 1C= E;' F= ' 1' =' E 11@C@ ? ' EA C ?@' G@C@' = E'
EAG?%' F@' A? @b @? @' GA E' I @' F= ' =? ' D=C ' J >F ' I @' ?E @E'
1AC' 1AC>@C ' GFA' DC@B= ' A?' =' J =?' A' @] @ @' =' E@@E' I ' J C@DC@T
@? ?>' ' @>= ' @11@ ' ?' F@' A F@C' F=?E%' F@' G= ' @=C ' A1'
AD ? A?' F= ' F@' DC A?@C' G= ' > ' A1' F@' C J @' J D @E' A' F J '
1' F@' A I = ?@E' = ?> %' H J =C<' A' F@' D=C F J @? ' =?E' =1 @CG=CE '
=11] @E' F@' @= ' I !3'

+' :' <441(7 10 '$+=' 49/' : (+7/(=' 9/(/' ' M ' 1' DM' =' Y' +1' 9' ^ 3 5' G'
=// ; =' 42' 9+J/' 3// '' ' 2' 12<' 4' &2(' <44/ (') ' +=4' ' ' 1' . N' =' I' '' ' EAY' H ' =4
'' 49 =' 1+=/ ' ' ' ! .DM
" B' /V' ')) ' H' ' ; =' I . N 1 3' /) ' 2** ' =' G' ' ,' 23' IY. '
Wwb' ' : / (S' 1+=/ ' G' +=4' ' ' 1' . N' '' /V' 0 ((/4' ' : ' H. G' 49/' : /P
=' I' '' ' EAA &/ ' :+ ' 4=' 7/(/' ' : 14/ :' &2((/+ : ') ' +' (/P
W)b 22(' DYM' 2#' . M. ' F " ' */+=/' 42' +'' ** 4/(+4/' "/(=2 '' '' 249/(

" ‘ $‘ 8% ‘ % D
93 =‘ 6 : 6D
38 =‘ %‘ 2 %-‘
6 U‘ ‘2 =$‘
$ 98 6 3‘ %‘
‘ : % 6 ? 38 0‘
E3‘ %8 38 $‘ % ‘
> 3 ‘E 73‘
<338‘ 3 I3 : ‘
V> E%6 ‘E $‘
B8% > 3 : 93‘
<3 >338‘ E3‘
? 3‘ % ‘ " $‘
3 : 89‘ ‘
%73 ‘ 8 : ‘% ‘
E $‘ $ 98 89‘

A‘ GF@C@‘ DA?‘ =?‘ ?E J @? ‘ 1AC‘ 1AC> ?>‘ =‘ C@ @ D ‘ 1AC‘ V‘
‘ =DD@=C@E‘ F= ‘ F@‘ DC A?@C‘ =?‘ = AC?@ ‘ F=E‘ F@@?‘ @JD A @E‘ I ‘
A?@‘ CAG F@C‘ A‘ @ @‘ =?‘ = A?‘ =>= ? ‘ F J ‘ = ‘ F@‘ ‘ A1‘ =‘
I E ?>‘ F‘ =?E‘ =‘ J @@ ?>‘ AA<‘ D = @‘ = ‘ GF F‘ = ‘ F@‘
C@= C@C‘ =?E‘ AAE= ‘ F@‘ @G=CE‘ A1‘ F@‘ I‘ = @?E@E‘ =?E‘ F@‘
I‘ =>C@@E‘ A‘ =<@‘ V‘ ?‘ = 1= A?‘ A1‘ F@ C‘ E@J=?E‘ F@‘
DC A?@C‘ F@?‘ DCAE @E‘ =‘ D @ @‘ A1‘ D=D@C‘ A?‘ GF F‘ G= ‘ =‘ =JD‘
=?E‘ =‘ C@ @ D ‘ G= ‘ GC @?‘ A?‘ ‘ =?E‘ F=?E@E‘ A‘ = ‘ GFA‘ C@=E‘ ‘
= A E‘ =?E‘ C@ C?@E‘ ‘ A‘ F@‘ DC A?@C‘ =?E‘ FAC ‘ =1 @CG=CE ‘ ‘
G= ‘ C@ C?@E‘ A‘ = ‘ =?E‘ F@‘ =?E AAE= ‘ >?@E‘ ‘ F@‘ DC A?@C‘
D= ?>‘ F@‘ V‘ ‘ 1C@ F‘ E@ J =?E‘ I @ ?>‘ =1 @CG=CE ‘ J=E@‘ A?‘ CAG F@C‘
1AC‘ =‘ 1 C F@C‘ J‘ F@‘ C@ @ D ‘ G= ‘ DCAE @E‘ D CDAC ?>‘ A‘ F@‘ 1AC‘
-V‘ =?E‘ F@‘ 1 > C@ ‘ G C @?‘ A?‘ =?‘ @C= C@ ‘ 7 F@‘ C@ @ D ‘ =1 @C‘ ‘
G= ‘ C@=E‘ = A E‘ I ‘ = ‘ G= ‘ 11 @? ‘ A?>‘ ?‘ F@‘ F=?E ‘ A1‘ F@‘
DC A?@C‘ A‘ @?=I @‘ F J ‘ A‘ I @‘ F@‘ 1 > C@ ‘ -‘ 1AC‘ F@‘ 1 > C@‘ ‘
I @1AC@‘ F@‘ C@ C?@E‘ ‘ A‘ = ‘ A‘ F@‘ >?@E;‘ =?E‘ ‘G= ‘ A? @?E@E‘
1AC‘ F@‘ DCA @ A?‘ F= ‘ @B@?‘ 1‘ F ‘G= ‘ '@‘ 1= ‘ =?E‘ F@‘ DC A?@C‘
?‘ F= ‘ J =??@C‘ ?E @E‘ = ‘ =?E‘ AAE= ‘ A‘ >?‘ F@‘ C@ @ D ‘
I @ @B ?>‘ ‘ A‘ I@‘ ‘ =‘ C@ @ D ‘ 1AC‘ ‘ F ‘ GA E‘ A? @‘ F@‘
C J @‘ A1‘ 1AC>@C ‘ ‘ 6A 1@‘ ‘ A E‘ F@‘ Z C ‘ F= ‘ F@‘ G= ‘ @=C ‘
A1‘ AD ? A?‘ F= ‘ 1‘ F@ ‘ FA >F ‘ F@‘ = @C= A?‘ A1‘ F@‘ EA J @?‘
G= ‘ J =E@‘ I @1AC@‘ = ‘ =?E‘ AAE= ‘ >?@E‘ ‘ F‘ A?E ‘ A?‘ F@‘
D=C ‘ A1‘ F@‘ DC A?@C‘ FAG@B@C‘ 1C= E @? ‘ GA E‘ ?A ‘ A? @‘ F@‘
C J @‘ A1‘ 1AC>@ ‘ " B

B 89‘ ‘ $3‘
: 33 : ‘ 8‘ ‘
? 8 5$‘ %>8‘
8 ? 3

‘ F= ‘ I @@?‘ FA E@?‘ A‘ F@‘ =‘ 1AC>@C ‘ 1AC‘ ! D@C A?‘ A‘ J =<@‘ =‘ 1@A11T
J @? ‘ A1‘ @C = ?‘ =?E ‘ A‘ ‘ ‘ =?E‘ =1 @CG=CE ‘ A‘ J =<@‘ =‘ E@@E‘ A1‘
1@A11 J @? ‘ A1‘ F@‘ = J @‘ =?E ‘ A‘ ‘ # ‘ A1‘ =‘ E= @‘ DC AC‘ A‘ F= ‘ A1‘ Fu‘
1@A11 J @? ‘ A‘ ‘ ‘ ; 1AC‘ F@C@ ?‘ F@‘ 1= 1 @ ‘ F@‘ E= @‘ ?‘ ACE@C‘ A‘ E@1C= E‘
F ‘ AG?‘ 1@A11@@‘ I ‘ J =< ?>‘ =‘ @ A?E‘ A?B@ =? @‘ GF F‘ = ‘ F@‘ J @‘
F@‘ F=E‘ ?A‘ DAG@C‘ A‘ J =<@‘ NZd‘ ?E‘ ‘ ‘ = A‘ = E‘ F= ‘ F ‘ C J @‘
GA E‘ F=B@‘ I @@?‘ F@‘ =J @‘ 1‘ I ‘F ‘ A?B@ =? @‘ F@‘ F=E‘ D= @E‘ A? ‘
=?‘ @b =I @‘ ? @C@ ‘ 1AC‘ >AAE‘ A? E@C= A?‘ =?E‘ F=E‘ =1 @CG=CE ‘
I ‘ F‘ =‘ I @b @? ‘ =? @ E= @E‘ A?B@ =? @‘ @?E@=BA C@E‘ A‘ =BA E‘
‘ 1 3‘ ! ! %
‘ I ‘ E@@E‘ I @=C ?>‘ E= @‘ A?‘ F@‘ . F‘ A1‘ * = ‘ 9 9‘ A?B@ @E‘ A?‘
F= ‘ E= ‘ @C = ?‘ =?E ‘ A‘ ‘ ?‘ 1@@‘ I @b @? ‘ A?‘ F@‘ - F‘ A1‘
DC ‘ 9 ‘ ‘ DCAE @E‘ ‘ E@@E‘ I @=C ?>‘ E= @‘ F@‘ - F‘ A1‘ * =C F‘
9 9‘ D CDAC ?>‘ A‘ I @‘ =‘ E@ J @‘ A1‘ F@‘ = J @‘ =?E‘ 1AC‘ =‘ A?>‘ @C J‘
A1‘ @=C ‘ = ‘ 1CA J‘ F@‘ -8 F‘ A1‘ * =C F‘ 9 9‘ 1CA J‘ ‘ A‘ ‘ ‘ G= ‘
1A ?E‘ I ‘ F@‘ Z C ‘ F= ‘ F@‘ = @>@E‘ @= @‘ G= ‘ @] @ @E‘ =1 @C‘ H‘
A?B@ =? @‘ A‘ ‘ =?E‘ =? @ E= @E‘ 1AC‘ F@‘ D CDA @‘ A1‘ E@1C= E ?>‘ ‘
@ E‘ F= ‘ ‘ =?E‘ ‘ G@C@‘ > ‘ A1‘ 1AC>@C ‘ " : : B

>% : $‘ E 8‘ ‘ > $‘ > 38 0‘ >E3 3<=‘ E3‘
$3 3 : ‘ 0‘ Q ‘ - 8 : 0‘ E%69E‘ $373 ‘
%<l3 %8$‘ >3 3‘ B38‘ 8 : ‘%73 6 3 : ‘%8‘ ‘
? % %8‘ %‘ C6 $E0‘ 8$‘ %<l3 %8‘ > $‘ B38‘
%8‘ E3‘ 9 %68 : ‘ E ‘ E $‘ > $‘ 8% ‘ 8‘ 8 ‘
: E 3‘ % 38 3 ‘ E $‘ 223 $‘ 8% ‘ %‘
E 73‘ <338‘ 8‘ 8 : ? 38 ‘ % ‘ % 93 =0‘ ‘
3 $ ‘ 8‘ E3‘ 6$6 ‘ % ? ‘ 33‘ E3‘ ‘Q‘ ‘
‘ 3 0‘ ‘0 0‘ $‘ 0 ‘2 ‘ 0‘ >E E‘ > W‘
8 6 : 3‘ $% ? 3‘ 3‘ % ‘ E $‘ $$
‘ S39 ‘ ‘ / E : > B0‘ ‘ J ‘ Q‘ O%< ‘
‘ O% 30‘ A 0‘ : : 3 : ‘ E ‘E3‘ E : ‘ $ ‘
=3 ‘ E : ‘ % $ %8‘ %‘ 9 73‘ E ‘ 2% 8 ‘
? 6 E‘ %8$: 3 %8‘ 8‘ E3‘ 2 3 3 : 89‘ $3
"*B‘ H‘ ‘=4‘ .YN‘ <*4‘ IY‘ 3‘ .‘ +70

+ ‘ / ‘ ‘ 0‘ $ ‘ ‘ A %‘ * < ‘ ‘ *! ‘
‘) ‘ 0‘ ‘ 2 ‘ ‘ I
F !‘ ‘) >B ‘ + ‘ / ‘ ‘ 0‘ $ ‘ ‘ A ‘
*EI‘ ‘ * !‘ ?‘ E3‘ 8% 3$‘ !

" : ‘ O ‘ ‘ @ $%8 0‘ ‘ R ‘ M ‘ J ‘ / ‘ ‘
‘ J 8 0‘ A 0‘ K " ‘ $‘ : ‘ : %>8‘ 8‘ ‘
"8$ ‘ ‘ - $%‘ <=‘ ‘ J ‘ P%$ 3 0‘ 8 : ‘ 8‘
O6$$3 ‘ %8‘ / ? 3$0‘ 8‘ E3‘ 2 $$ 93$‘ 3D
3 3 : ‘ %‘ 8‘ E3‘ %6 $3‘ % ‘ E3‘ 96 ? 38 0‘
$‘ > 3 ‘ $‘ 8‘ : ? 8$‘ R >‘ T %8 =0‘ E ‘
>E38‘ ‘ 2 =‘ ? B3$‘ ‘ 3% ? 38 ‘ % ‘ 8 : 0‘
8 : ‘ 3 > : $‘ ? B3$‘ ‘ 3% ? 38 ‘ % ‘ E3‘
$? 3‘ 8 : 0‘ 8‘ > E E‘ E3‘ $ 3$‘ E3‘ : 30‘
E3‘ $‘ 9 6 =‘ % ‘ % 93 = ‘ 5

& F@C@' CAG?' >=B@' C = ?' =' F@b @' 1AC' ' A?' F@' =?<' A1' A?EA?%' GF F%' F=B ?>' I@@?' DC@ @? @E' =?E' D= E%' G= ' I ' F@ J' C@ C?@E%' =? @ @E' ?' F@' = ' G= %' A' CAG?%' GFA' = @C@E' ' ?' F@' F=?EGC ?>%' =?E' F@?' AA<' ' I= <' A' F@' I=?<%' E@ =C ?>' F= ' ' G= ' =' 1AC>@C %' =?E' GCA @' =' = @ J @? ' A' F@' @11@ ' F= ' F@' F@b @' G= ' 1AC>@E' I ' C = ?;' A <I C?%' ' %' ' C@DAC @E' A' F=B@' F@ E' F= ' F@C@' G= ' ?A 1AC>@C ' I ' CAG?;' F@' C@= ' A11@? @' A J J @E' I ' CAG?%' = ' C@>=CE ' F@' F@b @%' G= ' A I = ? ?>' J A?@ ' A?' C@E ' I ' J @=? ' A1'=' 1= @' DZ@ @? @' F= ' ' G= ' 1AC>@E%%' GF@C@= ' ' G= ' >@? ?@ ' 1 3' %

1'=' I ' A1' @] F=?>@%' D= =I @' A' ' ' AC' ACE@1Z' ' @ ' ? A' F@' F=?E ' A1'=?A F@C' D@C A?' A1' F@' =J @'?=J @' G F' F@' D= @@%'=?E' F' D@C A?%' <?AG ?>' F= ' F@' ' ?A ' F@' C@= ' D= @@%' ?' GFA @' 1=BA C' ' G= ' EC=G?%' ?EAC @' %'1AC' F@' D CDA @' A1'1C= E @? ' DA @ ?>' F J @ 1' A1' F@' J A?@ %' F@' ' > ' A1'1AC>@C %' N J d

F@' @C ?>' A1'=' ?A @%' = ' F@' ?A @' A1' =?A F@C' D@C A?%' F= ' I@@?' FA E@?' A' I@' 1AC>@C %' FA >F' F' ?A @' G= ' J =E@' ?' F@' =J @' ?=J @' = ' F= ' A1' F@' DC A?@C

F@' DA ? ' =CA @' ?' F@' 1A AG ?>' = @$ GA' DC A?@C %' ?=J @E' 5=C<@ ' =?E' FA J = ' CAG?%' G@C@' ?E @E' 1AC' 1AC> ?>' =' DCA J AC ' ?A @%' A1' GF F' F@' 1A AG ?>' ' =' AD ' ; `

7 (?>F A?%' = AD%' DC ' - % .

7 " A ' ' - :9

7 ' DCA J @' A' D= ' A' I@=C@C%' A?' E@ J =?E%'= ' * @ C ' # AG?%' FAC?T A?%' =?E' A H %' =?<@C %' A?EA?%' F@' J ' A1' B@' ?@= %' 1AC' B= @' C@ @ B@E ' AC' @ 1'=?E' A

' ' ' 1 3

' '

7 ? @C@E%' ' %H

F@C@' G= ' =' @ A?E' A ? ' 1AC' @C ?>' F@' =J @%' <?AG ?>' ' A' I@' 1AC>@E ' F@' DC A?@C' CAG?' @C@E' F@' '?A @' A' A?@' %' =' FA@ J =<@C%' ?' D=C ' D= J @? %' 1AC' =' b =? ' A1' I AA ' =?E' FA@ ' GF F' F@' F=E' I A >F %' CZ?E@C' =' DC@ @? @' F= ' F@' G= ' =' =D = ?' CAG?' A1' F@' . F' C@> J @? %' =?E' >A ?>' J J @E = @ ' A' F@' & @ ' ?E @ ' ' F@' J @' GF@?' F@' I=C>= ?@E' 1AC' F@' =C @ ' = ' H ' FAD%' F@' A E' ' F= ' 1' F@' GA E' @?E' F ' I A ' G F' F J ' F@' GA E' @?E' I = <' F@' J A?@ ' $ I ' ' E@ ?@E' F %' =?E' G@?' F J @ 1'G F' F@' DC A?@C ' & F @' A?' F@ C' G= ' CAG?' = E' F= ' F ' I CA F@C' G= ' =>@? ' A' F@' . F' C@> J @? %' =?E' GA E' I ' = ' F@' FA@ ' ' F=E $ =?E' DA?' F@ C' A J ?>' A' =' D I FA @%' F@' ?B @E' ' A'>A' ?%' = ?>' F@' FA E' @@' F ' I CA F@C' DC@ @? ' F@ ' F@?' = ' EAG?' A>@ F@C' A?' =' I@? F%' ?' F@' >=CE@?' A1' F@' D I FA @' ;=?E' CAG?' DCA @@E@E' A' D@=<' 1 C F@C' A1' F ' I CA F@C%' GFA%' F@' = E%' F=E' Z ' J =CC @E' =' =E ' G F' ='1AC ?@' A1' 8% .%' =?E' F=E' E@DA @E' ' ?' F@' F=?E ' A1' #AG?' =?E' A' 1 @C' A J @' J @%' F@' I CA F@C' ?A ' =DD@=C ?>' CAG?' G@?' ? A' F@' FA @%' =?E' C@ C?@E' =>= ?%' ?>' @] DC@ A? ' A1' E =DDA ? J @? ' = ' F@' =I @? @' A1' F ' I CA F@C%' =?E' =EE@E' $ 7 ' = J' ACC ' ' =??A ' D= ' A ' ?' >A E$

* 3 %8' % ' ' E3C63' <=' E3' : >3

"8 : % $ 89' ' < ' <=' ' 23 D $%8' % ' E3' $?3' 8 ?3' $' E3' 2 =33

W 3 89' ' 8% 3' ? : 3' 8' E3' $?3' 8 ?3' $' E ' % ' E3' 2 $%83

2* : / '' 42' 3/' &2() / (# 42' 44 / (' +' '24/' +=' 49/' ' 24/' 2& +' 249 / (' 492<) 9' ; + : /' '' 49/' '' (P =2' / (S= 27 '' ' + ; /

!' A 8' ' E3' A 8B' % ' R%8 : %8 0' ' ' E3' > % : $0' K '' 2 % ? $3' %' 2 =' E3' P ' Q' P ' ' E3' $3' $' 73 =' 68$ $D <3 3 ' %8' : 3 ? 8 : 0= 8 : ' $%' E3' > % : $0' % =' 32% 3 : ' " ' : %3$' 8% ' $E3 >' 8' K E3' $8 ? ' % ' 73' 96 83 $0' % ' 7 63' 3D >E ' E3' 3 %8' %8$ $ 3 : 0' Q 3 73 : ' % ' 3 ' 8 : ' / % 0= >3 3' ' 8' ' J 3 : ' ' X%689 0' ' ' A ' E3' 8% 3

I = ?> B@ A GF= Z = >AAE A?@ A1 J ICA F@CH EC=1 1AC GF F F=B@ I@@?> ? A F@ FA @ A >@ = FI F @ =?E ACE F= ?A @?A >F I F J H @ F@?DCAE @E F@?A @ ?b @ A?=?E>=B@ A GFA= <@E 1 G= A?> F@ JA?@ AE>@E G F #AG?=?E A H$ CAG?> E F= G= D= E ?> F= J =??@C A?E@J=?E1AC F@ G=? @E?A C@E @ F@?=DDA ? @E A J@@F J ?> F@=1 @C?AA?I = =?A F@C D = @GF@C@ F@ GJ E D= F J> F@ I= =? @ F@?A @ G= AA?E AB@C@E A I@=1AC>@C =?E A E F@=C ?A F ?>J A !@ A1 CAG? 5=C<@ =?E CAG?G@C@ A??@ @E A>@ F@C;=?E GE @?5=C<@ G= =<@?D JAC@F=?1AC A1 F@ @ 1B@ > ?@=?A @ ?I =?<GbC@1A ?E DA?F JE= @E ?>F A?= AD ;=?E =1@G A1 F@ =J @ AC A1?A @ G@C@= A1A ?E A? @= @E ?E@C =IA=CE ?=FAD GF@C@ CAG?G= =CC@ @E=?E GF F G= DCAI=I @F@F=E FC F@C@ F@?A @?b @ A?G= DCAB@E A I@1 @E D R?F@ F=?EGC ?>A1 5=C<@ ;=?E F@ ?=J @ FAJ= L CAGJ G= = A ?F@ F=?ET GC ?>A1 5=C<@ ?5=C<@ H DA <@ IAA<G= 1A ?E=C@ @D ?E@C =AB@C=EEC@ @E A FAJ= CAG?= F@ AJD @C NF@ DC A?A GF F CAG?F=E I@@?AJJ @Ed1AC @` 1AC 1A C1B@ > ?@=I #AG?=?E A F=E?A F AJ@C = FAJ= CAG?A1 (?>F A?? @E A>@ F@C;=?E GE @?5=C<@ G= =<@?D JAC@F=?1AC A1 F@ @ 1B@ > ?@=?A @ ?I =?<GbC@1A ?E DA?F JE= @E ?>F A?= AD ;=?E =1@G A1 F@ =J @ AC A1?A @ G@C@= A1A ?E A? @= @E ?E@C =IA=CE ?=FAD GF@C@ CAG?G= =CC@ @E=?E GF F G= DCAI=I @F@F=E FC F@C@ F@?A @?b @ A?G= DCAB@E A I@1 @E D R?F@ F=?EGC ?>A1 5=C<@ ;=?E F@ ?=J @ FAJ= L CAGJ G= = A ?F@ F=?ET GC ?>A1 5=C<@ ?5=C<@ H DA <@ IAA<G= 1A ?E=C@ @D ?E@C =AB@C=EEC@ @E A FAJ= CAG?= F@ AJD @C NF@ DC A?A GF F CAG?F=E I@@?AJJ @Ed1AC @` 1AC 1A C1B@ > ?@=I #AG?=?E A F=E?A F AJ@C = FAJ= CAG?A1 (?>F A?= ?FCAD F C@;=?E F@C@ G= ?A @B E@? @F= F@!DC A?@C CAG?F=E =? C@ E@? @ AC A??@ A? = F= D = @ F@Z C 1A ?E IA F DC A?@C > ;=?E = @E F= F@ FA >F 5=C<@ >?@E F@ ?A @ ?b @ A?B F CAG?H = @? =?E F= CAG? @C@E ?E@C =C@DC@ @? = A? F= G= F IA F@CH <?AG ?> F= G= ?A A G F ? @? A E@1C= E G= AIZ@ @E$1C F= F@?=J @F<4&6 "4 &G= F@C@=?=J @A1A?@A1 F@DC A?@C ;@ A?E F= G= ?A1AC>@C ? 5=C<@ A >?F@?=J @A1 FAJ= CAG?G F F A? @? ;F CE F= 1 5=C<@ G@C@ ?A > A1 1AC>@C CAG? A E?A I@ > A1 @C ?> F@ ?A @ <?AG ?> A I@ 1AC>@E;=?E1A C F F= F@ I @b @? J D@DC@ @? = A? A1 CAG? A >F?A A =11@ 5=C<@ A? =>CA ?E CC@ @B=? A F@ IZ@ ?AG ?E@C A? E@C= A? ; I = A1 F@J F@ E F@ A?B A? C >F = A CAG?; =?E CA @ 1 @CG=CE E@ B@C@E F@ C AD ? A? @AI @CB@E7= A F@1C AIZ@ A? F= F@E@1? A? A1 1AC>@C &= [F@1= @J =< ?>= ?A @AC A F@C ? C J @? G F ? @? A E@1C= E; GF F J >F I@ EA?@ @ F@C I ?> F@ ?=J @ A1 A?@ GFA E E ?A @ AC A1A?@ GFA E E @] G FA F A? @? F= F G!= A1 F@ 1AC J @C E@ C D A?; I@ ?> @C@E I F@ DC A?@C = F@?A @ A1 I ICA F@C?A F D@C A?= F ICA F@C A1 F= ?=J @= DD@=C ?> A @] $=?E F= F@ C J =? @ A1 I@ ?> J=E@ ?F@ =J @ ?=J @ = F AG?A E?A J=<@ =? E 11@C@? @; I@ ?> @C@E = F@?A @ A1 =?A F@C=?E?A F AG?F@ =J @ =? G@C =DD @E A F@ @ A?E AIZ@ A? ?A F@C A?@] @E A GFAJ F@?=J @ A1 FAJ= CAB ?6 < !2 "4 *< 4 =DD @E < " A E I@?A A? @? > B@? A >? F@

?= J @ ' ' G= ' >?@E' I ' F@' = FAC ' A1' 6' FA J = ' CAG?' F ' ?A ' A1' < ' FA J = ' CAG?' 1AC' GFA @' ?A @' ' D CDAC @E' A' I@' > B@? ' AC' F@' D@C A?' ?' GFA @' ?= J @' F@' ?A @' G= ' J =E@' G= ' = ACE ?>' A' F@' E@ C D A?' A1' F J ' ?' F@' ?A @' F@?' =' C@ E@? ' = ' (?>F A?' ?' = AD' ;' =?E' ' J DAC @E' F= ' F@' G= ' =' ACC@ DA?E@? ' A1' #AG?' =?E' A' =?E' F=E' J A?@ ' ?' F@ C' F=?E ;' =?E' F@' G= ' = A' C@DC@T @? @E' A' I@' F@' ICA F@C' A1' F@' DC A?@C' ' I ' ?A' F' D@C A?' A1' F= ' ?= J @' =?E' E@ C D A?' =DD@=C@E' A' @] ' ?E' = ' F ' G= ' DCAB@E' =?E' 1A ?E' A' I@' EA?@' 1AC' F@' D CDA @' A1' 1C= E ' F CE ' F= ' F@' ?E J @?' E E' ?A ' F=C>@' F=1' CAG?' @C@E' F@' ?A @' <?AG ?>' ' A' F=B@' I@@?' *4"2 # :2' N6" ' I ' A? ' <?AG ?>' ' A' F=B@' I@@?' *4"2 #G' =?E' F@C@1AC@' @ ' ' F=B@' I@@?' 1AC>@E' I ' GFA J A@B@C' ' J >F ' ' G= ' @b = ' =?' A11@? @' ?' CAG?' A' @C' ' ! 3

AF?' @B@ ' G= ' ?E @E' 1AC' 1AC> ?>' =?' ?EAC @ J @?' A1' =' I ' A1' @] F=?>@' ?' F@' ?= J @' A1' =C?=CE' * ! =C ' G F' ? @?' A' E@1C= E' & ' * = @C ' =?E' ' @= F= J D' , ';X=?E' F@' ?E J @?' A? = ?@E' =' A ?' 1AC' @C ?>' =' 1AC>@E' ?EAC @ J @?' ?' F@' ?= J @' A1' =C?=CE' * ! =C ' G F' F@' <@' ? @? A?' F@' I 'A1' @] F=?>@' ?' b @ A?' G= ' ?' F@ '1A AG ?>' 1AC J '$Y`

E3' 2 $%83 ' $$6 ? 3 :' %' <3' E3' 3 ' 8D :% $3 ' % ' ' < Z <6 ' $' E3 3' > $' 8%' $3' ? B 8 Z' ' > $' E% : 38' 8% ' %' <3' % D 93 =' E%69E' E3' ' > $' :%83' 8' %8D 3 ' > E' E3' 3 ' 8 : % $3 ' 8 :' % ' E3' 26 2%$3' % ' 6 :

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7 = F' =?<' " AB ' ' . 9

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Q G 8 ' , #

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F@’ DC A?@C’ G= ’ ?E @E’1AC’1AC> ?>’ GA’ DCAJ AC ’?A @ ’ ?’ F@’1A AG ?>’1AC J’$ `

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F@’ DC A?@C’ I@ ?>’ ?E@I @E’ A’ CAG?’ A?’=?E’ A’ F@ C’=>@?’ DC@ @E’F J’1AC’D= J@? ;’ F@’F=E’ DC@B A ’= @C = ?@E’ F= ’ * C ’ & = @C ’ F@’ DC A?@CH’ J A F@C ?’ =G’ G= ’ =’ A B@?’ D@C A?’ I ’ F@’ E E’ ?A ’ <?AG’ F@C’ FC =?’ ?=J@’; F@’ A11@C@E’ A’ > B@’ F@’ DC A?@C’ J@’ 1’ F@’ >A ’F ’ J A F@C ? =G’ A’ZA ?’ F J’ ?’ ?A @ ’1AC’ F@’=J A ? ; F ’ F@’DC A?@C’ =>C@@E’ A’EA’ =?E’ ?’ F@’ DC A?@CH’ DC@ @? @’F@’EC@G’ F@’IAE ’A1’ GA’?A @ ’GF F’ F@’DC A?@C’ >?@E’ F@’ DC A?@C’ = E’F@’GA E’ >A’ A’ F ’ J A F@C ? =G’ =?E’ >@ ’F@C’ A’ >?’ F@J ’; =?E’ F@’ AA<’ =G= ’ F@’ ?A @ ’ =?E’ C@ C?@E’ ?’ =?’ FA C’ =?E’ F=?E@E’ F@’ ?A @ ’ A’ F@’ =>@? ’ = ?>’ 7 @C@’ =C@’ F@’ ?A @ ’; F@ ’ G ’ I@’ D= E’ I@1AC@’ F@ ’ =CC B@’ = ’ J= C ’ F@’ =>@? ’ AA<’ F@’ ?A @ ’ I@ @B ?>’ F@ ’ F=E’ I@@?’ @]@ @E’ I ’ F@’ J A F@C ? =G ’ ’ G= ’ DCAB@E’ F= ’F@C’?=J @’G= ’ = F@C ?@’ =?E’ F= ’ F@’ F=E’?@ F@C’ >?@E’?AC’ = FAC K@E’ =? ’A?@’ A’ >?’ F@’ ?A @ ;’ I ’ F@ ’ F=E’ I@@?’ >?@E’ I ’ F@C’ E= >F @C’ ??@’ F@’ DC A?@CH’ G 1@’ ?’ F@C’ = ’ F=?EGC ?>’ F@’ Z C ’ G@C@’ A E’ F= ’ 1’ F@’ DC A?@C’>A ’F ’ G 1@’ A’ >?’ F@’ ?A @ ’ ?’ F@’ ?=J@’ ’ & = @C ’H F@’= ’ F@’ J @’ ? @?E ?>’ A’ D= ’ F@J ’= ’ F@’?A @ ’ A1’F ’ J A F@C ? =G’=?E’ F= ’F@’=1 @CG=CE ’D= @E’ F@J ’ A’ F@’ =>@? ’1AC’ * @ C ’ CAG?’ A?’=?E’ A’ = ’ F@’?A @ ’ A1’F ’ J A F@C ’ ? =G’ F@’ ?E J@?’ G= ’ DDAC @E’ F@’Z C ’1A ?E’ F= ’F@’ >A ’F ’G 1@’ A’ =11]’ F@’ >?= C@’ ’ & = @C ’H F@’= ’F@’ J@’ ? @?E ?>’ A’D= ’ F@J ’ A’ F@’ =>@? ’ = ’ F@’ >@? ?@’?A @ ’A1’F ’ J A F@C ? =G ’ ?’ =’ = @’ C@ @CB@E’ ’G!= ’ C>@E’ F= ’ F ’G=

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F@ = @ ?GF F =D=C A J J ?>1AC>@C F= @E =?= J @ E 11@C@? 1CA J F AG? A? @ F@C A1 FA @ ?GF F F@ ?= J @ @E F= I@@? A1 =C@= @] ?>D@C A? AC FA @ ?GF F F@ ?= J @ @E F= I@@? A1 =D@C A? ?A? @] ?>=?E 1 A = E A I@ @=C @ @E F= ? F@ = @ A1 1AC>@C AJ J @E ? F@ ?= J @ A1 =D@C A? C@= @] ?> J = @C ?A GF@ F@C F@ A11@?E@C D= F J @ 1 A11 }DA? F@ D=C @ = F@ J @ 1AC F D@C A? =?E C@ @ B@ C@E 1CA J F@ J = F F@ C@E ? F = @ ?A I@ ?> > B@? A F@ J DA AC D@C A?= G FA =? C@ = A? A =?A F@C I A F= A F@C D@C A? GFA J F@ C@DC@ @? @ F J @ 1 A I@ " B

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C@ C=@E' AA?' =1 @C' G F' F@' DCAI= @' A1' F@' G 'A1' AF?' &= = @%' F@C@ ?' E@ C I@E' A' I@' =' @=J=?' A?' IA=CE' F@' DC@ B@;' GF@?' AAD@C' C@b C@E' F@C' A' DCAE @' =' @C 1 = @' A' F@G' F=' F@' G=' F@' * =C ' & = = @' ?=J @E' ?' F@' G $' 1@G' E= ' =1 @CG!=CE' F@' ICA >F ' =' @C 1 = @%' =?E' DC@ @E' AAD@C' A' @?E' F@C' JA?@ ' A?' F@' C@E ' A1' F@' G=>@ ' E @' A' ' & = = @%' GF@?' F@' @ ' F@C F=B@' FC@@' > ?@= ' =?E' =' F= 1%' =?E' GCA @' F@' IAE ' A1' F@' DCAJ T AC ' ?A @' ?' b @ A?%' A' GF F' F@' I C I@E' F@C' J=C<%' =1 @C' GF F' F ' @C<' = @ @E' ' F@' G=' F@?' = <@E' GF=' ?=J @' F@ G=' A' D ' A' F@C' J=C<%' A' GF F' FI' =? G@C@E%' 7 HA ' <?AG' J ' ?=J @;' A ' J=' 'GC @' * =C ' & = = @%H GF F' F@' E E' ' G=' DCAB@E' @=C ' F=' F@C4' ?=J @' G=' K=I@ F' # ??%' =?E' F=' F@' GFA @' = A ?' G=' ='1=IC = A?' F@'Z C 'G@C@' E C@ @E' A' 1?E' F@' DC A?@C' > %' 1' F@ ' I@ @B@E' F=' F@' I C I@E' F@' ?A @' DCAT E @E' ?' =' 1= @' ?=J @%' @ F@C' I ' =' J=C<' ? @?E@E' I 'F@C' A'@]DC@ ' F' 1= @' ?=J @%' AC' I 'GACE ' =' @?> F%' G F' ? @?' A' E@1C= E' AAD@C%' =?E' F@'Z C ' = ACE ?> '1A ?E' F@C' > ;' =?E%' A?' =' = @' C@ @CB@E' A?' F@' b @ A?' GF@ F@C' =' F@' ?A @%' FA >F' J=E@' I ' F@' DC A?@C' ?' =?' = J @E' ?=J @' =?E' F=C= @C%' G=' F@C' AG?' ?A @%' J=E@' =?E' A11@C@E' = ' F@C' AG?%' =?E' ?A ' = ' F@' ?A @' A1' =?A F@C%' ?' A? C=E ? A?' A' F@C @ 1%' F@' A11@? @' =J A ? @E' A' 1AC>@C %' ? ?@' A1' F@'Z E>@ 'G@C@' A1' AD ? A?' F=' F@' DC A?@C' G=' DCAD@C ' A?T B @E' 1 3

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"&B' <' 'S=' 1+=/' .' /+19' AD' G' +=4 ' Y' 1' .N' =' IN' "' NYG' 72' 2&' 49/' 6<:)/=' 7/(/' +3=/'4' +':' =42' ' ' : :' '24' 12'1<(' '' 49/' 2" ' 2' "N&' G' +=4' ' ' 1' .N' =' IE' "' NY. W+B' ' : // :' 49/' 12'4(+(#" (2"2=4 2' +"" /+(=' 42' 9+J/' "1/'' 4+0/'' &2(')(+'4/ :' '' 2' /' (/"2(4 2&' 49 =' 1+=/' 9/(/' '' 49/' 2" ' 2'' 2&' 49/' ' ' /' 6<:)/=' 7 92' 492<)94' 49/' 1+=/' + ; 2<'4/ :' 42' +' 1+" 4+" &2()/(#' 49/' &2**27 ')' "+==+)/' 211<(=' m 0 '' 49 =' (/="/14' 49/' 1+=/' =' J/(# : &&/(/'4 &(2 ;' 49+4' 2&' +' "/(=2'' 32((27 ')' ; 2' /#' <"2'' 9 =' 27'' '24/' +' :' ; /(/*#' +==< ; ')' +' & 14 4 2<=' '+ ; /' 7 492<4' +' #' (/*+4 2'' 42' + : &&/(/'4 "/(=2' ? &2(' 49/(/' 49/' 792*/' 1(/ : 4' =') J/'' 42' 49/' "+(4# 9 ; =/*&? 49/' */' : /('+11/"4=' 49/' =/1<(4#' +=' 49/' =/1<(4# 2&' 49+4' "/(=2'' 2'*#? 9/' 9+=' '2' 249/(' (/ ; /: #' '' J /7' 9<4' ; /(/*#' +)+ '=4 49/' ; +'' 9/' =' : /+* ')' 7 49? +' :' 49/' =/1<(4# 4=/*&' =' (/+**#' +' :' 4(<*#' 49/' '=4(< ; /'4 2& 49/' "+(4# 792=/' +14=' 4' "<("2(4=' 42' 3/' 927/J/(' =<3=1(3/ :' 3# +' & 14 4 2<=' '+ ; /? 9/' 9+=' 49/(/&2(/' +' (/ ; /: #' <"2'' 4' +)+ '=4' 49/' "/(=2'' 2'' 792=/' 1(/ : 4' 9/' 4220' 4' +' :' 12'=/1" /'4*#' =' '24' =<3P =4+'4 +**#' :/&(+<:/: $ <' 'S=' /+=/' 4' /+19' YM

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& C ?>’ F@’ = @D =? @’ A1’ =?’ @] ?>’ D@C A?’ A’ =’ I ’ A1’ @] T
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GAC F’ A1’ A?EAD’ G@C@’ F@’ ACC@ DA?E@? ’ IA F’ A1’ * @ C ’ C ’
=?E’ F=CE’ =?E’ C@ @ B@E’ 1CA J’ * @ C ’ F=CE’ I ’ F@’ @ @?=’
=’ C@ J =? @’ G F’ =’ ’ A1’ D=C @ ’ = J A?>’ GFA J’ ’ G= ’ A’ I@’
E B E@E’ ?’ GF F’ AF?’ 5=C<@’ =?E’ A?’ A1’ * =? F@ @C’ G@C@’ ?T
E@E ’ * @ C ’ A @ GAC F’ 1ACG=CE@E’ =’ @ @C’ =EEC@ @E’ A?’ F@’
A E@’ @’ * @ C ’ ’ 5=C<@’ =?E’ A?’ F ’ ?’ F@’ ? E@’ A’ * @ C ’
AF?’ 5=C<@’ =?E’ A?’ = ’ 1A AG

7 A?EA?’ * = ’ ’ 9:

7 @? ’ ` & @’ F=B@’ C@ @ B@E’ A1’ * @ C ’ F=CE’ =?E’ A’ A?’
A C’ = A ? ’ I ’ F@’ @ @?=’ .’ EA =C ’ :’ @? ’ GF F’ G@’ G ’
C@ J H

F ’ @ @C’ =CC B@E’ ?’ * =? F@ @C;’ I ’ G= ’ D ’ = J A?>’ F@’ E@=E

&’ +’ b/(=2’’
7(4/’ +X +1P
1/"4+’ 1/’ ’’
9 =’ 27 ’’ ’ + ; /’
42’ (/"(/=/ ’ 4’ +’
& 14 4 2<=’
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4/ ’ 4’ 42’ : /P
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4’ (/"(/=/ ’ 4/ :’
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79 19’ 9/’ ; <=4’
9+J/’ 0’ 27 ’’
7+=’ ’4/ ’ : / :’
&2(’ 29 ’’
+(0/’ + ’ :’
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+’ 3+ ’ 0’ "2=4’
3 **’ ’4/ ’ : / :’
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4’ & D’ 9/*:

@ @C %' = ' F@' D=C @ ' G@C@' ?A ' A' I@' 1A ?E' F@C@ ' GA' AC' FC@@' F=%' 1' F@ ?T
E= ' =1 @CG=CE ' =' DA J=?' J @ ' F@' DC A?@C%' GFA' F=E' I@@?' IA F' =' @?E@E' F@C d '
I=?<C D '=?E' ? A B@? %' =?E' = E' A' F J %' 7 @C@' ' =' @ @C' =EEC@ @E' 'D'@] ?>"
A' AF?' 5=C<@' =?E' A?' #A' A ' <?AG' F' =' 1 C J V% @' = EZ' 1J?% G=' '
7 1' A C @' ' G ' F@' 1AC' J @;% =?E' = <@E' FAG' F@' A E' >@ ' ' 1AC>@C
F@' DA J=?' A E' F J %' I ' @?E ?>' =' ?A @' AC' = ?>' = ' F@' DA '
A11 @' F@' DC A?@C' @? ' =' J=?' A' F@' DA A11 @' G F' F@' 1A AG ?>'
?A @$ 7 =B@' F@' < ?E?@ ' A' E@ B@C' =? ' @ @C' E C@ @E' A' ' 5=C<@'
=?E' A?%' AC' ' 5=C<@' =?E' A %' A' F@' I@=C@C;% =?E' F@' @ @C' G= '
> B@?' A' F J ' @ @C ' F=E' I@@?' AJ@ J@ ' E C@ @E' A' F@' DC A?@C'
?' F@' ?=J @' A1! ' 5=C<@' =?E' A %' =?E' ' 5=C<@%' Z?E' A?@' E C@ @E' A'
' 5=C<@' =?E' A?' F=E' I@@?' > B@?' A' F C=%' I ' F=' F@' AA<' A'
AF?' 5=C<@' =?E' A %' F@%' DCA @ AC %' = ?>' F@' DDA @E' ' G= '
1AC' F@ J %' =?E' ' C?@E' A ' A' I@' A' F@' DC A?@C' =1 @CG=CE '
GCA @' = ' 1A AG ' A' * @ C ' A @ GAC F' ; `

7 * =? F@ @C%' * = ' %' 9:
7 @? % ` & @' =G= ' F@' DCAC1 @' A1' A C ' A1' F@' F' ? %' =?E'
I@>' ' J = ' I@?% ' @=C ' = ' DA I @' @?E' ' V' J J @E = @
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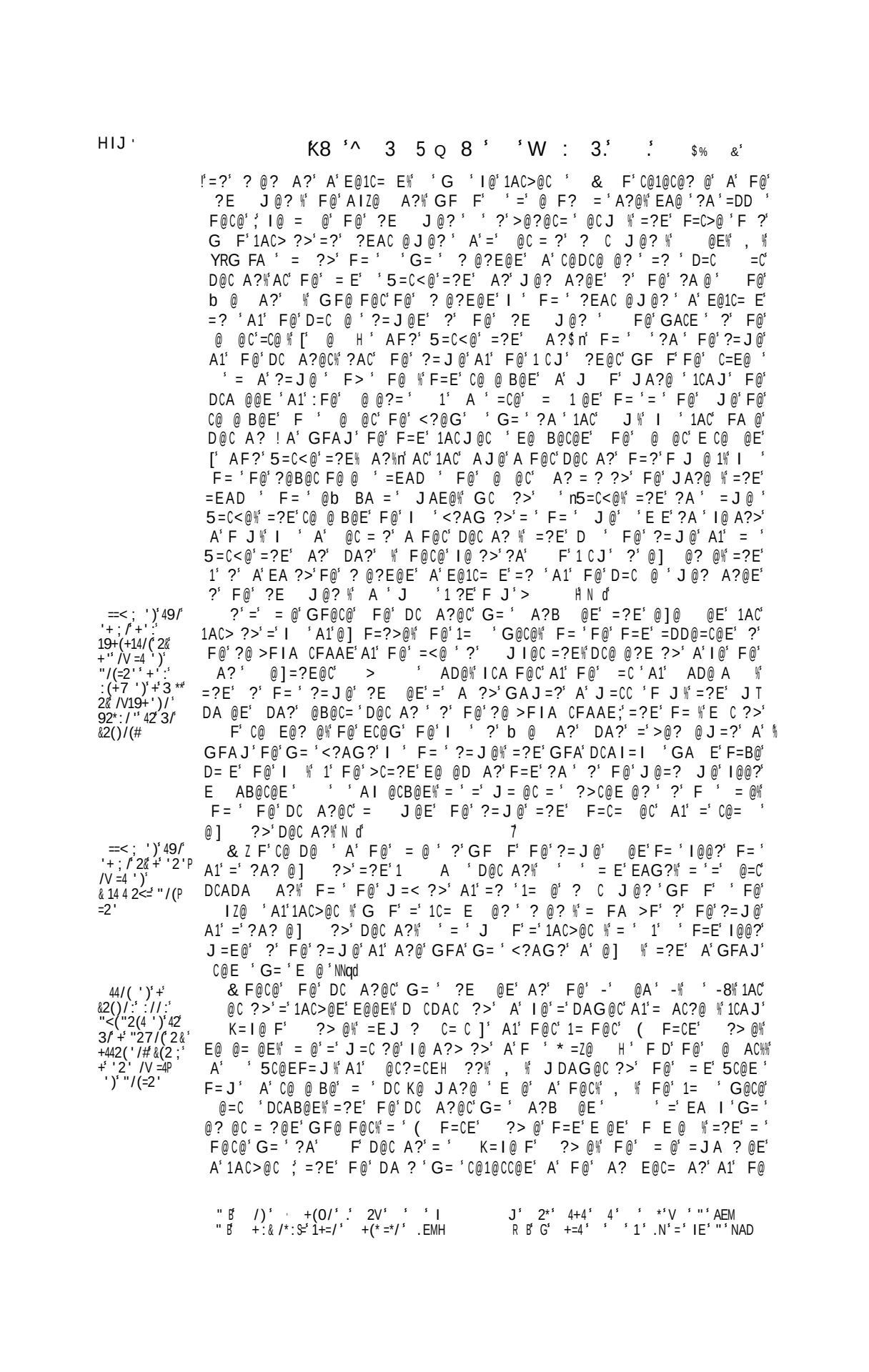
=?E%' ?A ' C@ @ B ?>' =?' =? G@C%' F@' GCA @' =?A F@C' @ @C' = < ?>' 1AC'
=?' =? G@C' I ' C@ C?' A1' DA %' =?E' F@?' * @ C ' A @ GAC F' 1ACT
G=CE@E' =' I=?<' DA ' I ' 1AC' V' 8 ' #' ?' F@' 1A AG ?>' @ @C%' '
=EEC@ @E' A' ' 5=C<@' =?E' A?%' * =? F@ @C$ `

7 A?EA?%' * = ' - - % 9:
7 @? % ` =B ?>' A E' F@' I A?' I ' F@' @ @?=%' G@' I@>' A' ?T
1AC J' A ' F=' F@' DCAE @' A1' A C' ? @C@ ' F@C@ ?%' B K%' .' EA =C '
:' @? %' G@' FA E' = ' A C' E DA = H

F@' DC A?@C' A I = ?@E' F ' @ @C' 1CA J' F@' DA A11 @%' =?E' G@? ' A'
* @ C ' ? @ @ H =?<' = ' * =? F@ @C%' =?E' DCAE @E' F@' I=?<'
DA ' I %' GF F' G= ' J=E@' D= =I @' A' ' 5=C<@' =?E' A?%' =?E'
?EAC @E' ' 7 '= ' 5=C<@' =?E' A?%H I ' GF@?' F@' F=?E@E' ' A' F@'
@C<%' F@' = E%' 7 F ' ' J =<@;' A C' 1 C J' ' ' 5=C<@' =?E' A %
D ??@C %' F=J %H ' G= ' A I Z@ @E' F= ' F ' G= ' ?A ' F@' 1AC>@C '
A1' =?' @?EAC @J@? ' F '@?EAC @J@? ' A E' ?A ' E@ @ B@' F@' D=C '
A' GFA J' F@' I ' G= ' D= @E%' = ' F@' ?=J @' ?' F@' IAE ' ' ' 5=C<@'
=?E' A?%' =?E' F= ' D?' F@' I= <' = ' 5=C<@' =?E' I?%' =?E' F@C@1AC@'
' =??A ' I@' =<@?' = ' F@' 1AC>@C ' A1' F@' ?=J @' ?' F@' IAE ' A1' F@'
I ' & >F J=?% $ 7 ' @@J ' A' J @' F= ' ' J ' =<@' = ' F@'
@B E@? @' A>@ F@C%' =?E' 1CA J' F= ' F@' I ' =DD@=C ' A' F=B@' I@@?'
? @?E@E' 1AC' AF?' 5=C<@' =?E' A?%' =?E' F= ' F@' DC A?@C%' F=B ?>'
A I = ?@E' ' I ' C@DC@ @?E ?>' F J @ 1' A' I@' D4< ' 5=C<@%' =1 @CG=CE '
?EAC @E' ' [' = ' 5=C<@%n' GF F' ' ?A ' F@' E@ >?= A?' A1' F@' D@C A?'
1AC' GFA J' ' G!= ' ? @?E@E ' ' ' C @' F= ' ' 5=C<@' =?E' A?' J= '
J @=?' =? ' A?@% bF?' AC' = J @ ;' F ' ' F ?<' ' G ' I@' =' b @ A?'
1AC' F@ ' C ' GF@ F@C' F@' E E' ?A ' ? @?E' A' E@1 J E' AF?' 5=C<@' =?E'
A?' GF@?' F@' =EE@E' F@' GACE ' [' =?E' A?%n' GF F' ' ?A ' F ' 1 C J H
1 @C' A? ?>' C@ G@ %' %' GFA' A? CC@E%' & >F J=?%' %' A E'
F@' Z C %' 7 F@' ?EAC @J@? ' I@ ?>' = ' 5=C<@' =?E' A?%' F@' F=C>@'
=>= ? ' F@' DC A?@C' %' F=' F@' ?=J @' ' 1AC>@E%' =?E' F= ' ' ' =?'
?EAC @J@? ' A1' =' ?A? @] ?>' 1 C J ;' =?E%' ?EA I @E %' 1' F@' ?=J @'
A1' =' ?A? @] ?>' 1 C J%' AC' A F@C' 1 A ' D@C A?%' I@' =DD @E%' G F



‘ G= ‘ =‘ 1C= E‘ I A F‘ A?‘ F@‘ AG?@C‘ A1‘ F@‘ I ‘ =?E‘ A?‘ F@‘ D@C A?‘ GFA‘ E A ? @E‘ ;‘ = ‘ F@‘ A?@‘ A ‘ F@‘ F=? @‘ A1‘ C= ?>‘ F ‘ DCAD@C ‘ =?E‘ F@‘ A F@C‘ A ‘ F@‘ I@?@1 ‘ A1‘ =‘ C@= ‘ ?EAC @C‘ 1‘ I ‘ = E@? ‘ F@‘ DC AC‘ ?EAC @ J @? ‘ FA E‘ F=B@‘ 1= @E ‘ I!3

4‘ =‘ &2( ) /4# 42‘) J/‘ 42‘ 49/‘ : (+7 / /‘ 2& +‘ 3 **‘ 2& /VP 19+ ‘) /‘ +‘ (/P 1/ "4‘ -‘ +‘ &+*=/‘ "+ ; /‘ +=‘ &2(-9/‘ "(=2 ‘ / (S‘ 27 -‘ ‘+ ; /‘ &2(‘ 49/‘ 129[‘ 4/ ‘ 4=‘ 2& 49/‘ 3 **‘ =<19‘ 3 **‘ 3/ ‘)‘ ‘ : 2(=/ :‘ -‘ 3*+ ‘ 0‘ &‘ 4‘ 4 /‘ : 2 ‘ /‘ &(+<: <*/ ‘ 4*# +‘ :‘ 42‘] 1+"/‘ : /4/14 2 ‘ ‘ +*492<)9 ‘ 2 + : : 4 2 ‘ +*‘ 1(/ : 4‘ 3/‘ 49/ (/3#)+ ‘ / :‘ 42‘ 49/‘ "(P =2 ‘ / (

‘ G= ‘ FAC ‘ =1 @CG=CE ‘ FA E@?‘ F= ‘ =‘ C@ @ D ‘ ?EAC @E‘ A?‘ =‘ I ‘ A1‘ @] F=?>@‘ ?‘ =‘ 1 A ‘ ?= J @‘ ‘ =‘ 1AC>@C ‘ = FA >F‘ ‘ EA‘ ?A ‘ D CDAC ‘ A‘ I@‘ F@‘ ?= J @‘ A1‘ =? ‘ D=C =C‘ D@C A?‘ F@‘ DC A?@C‘ = AC‘ G= ‘ ?E @E‘ 1AC‘ F= ‘ F@‘ F=B ?>‘ ?‘ F ‘ DA @ A?‘ =‘ I ‘ A1‘ @] F=?>@‘ ?‘ F@‘ GACE ‘ =?E‘ 1 > C@ ‘ 1A AG ?>‘ $ `

7 C‘ ‘ 7 = J GAC F‘ -E‘ > ‘ . . 7 ?@‘ J A? F‘ =1 @C;‘ E= @‘ D @= @‘ A‘ D= ‘ A‘ J ‘ ACE@C‘ F@‘ J‘ A1‘ G@? ‘ 5A ?E ‘ B= @‘ C@ @ B@E‘ = ‘ D@C‘ =EB @‘ 1 A J G ‘ 7

7 A‘ * C ‘ A @DF‘ 1 ‘ 7 " A ‘ -8‘ & F @ F=D@ ‘ 7 A?EA?‘H

1@ A? A ‘E E‘ J =<@‘ 1AC>@‘ =?E‘ A ? @C1@ ‘ =‘ C@ @ D ‘ =?E‘ = b T =? @‘ 1AC‘ F@‘ = E‘ J ‘ A1‘ G@? ‘ DA ?E ‘ = ‘ 1A AG@ F‘ 7 (@@E ‘ & ‘ & A?;‘H G F‘ ? @? ‘ A‘ E@1C= E‘ F@‘ = E‘ A @DF‘ J>** ‘ B ‘ @ A?E‘ A ? ‘ = @E‘ =?‘ @C ?>‘ G F‘ F@‘ ! ‘ ! G‘ =?E‘ < ‘ F CE‘ =?E‘ 1A C F‘ A ? ‘ G@C@‘ 1AC‘ *4"2! 2‘ =?E‘ @C ?>‘ ‘ G F‘ ! ‘ 4‘ E@1C= E‘ AF?‘ C >> ‘ =?E‘ @?C ‘ A? ‘ F@‘ I ‘ G= ‘ ?EAC @E‘ ?‘ I =?<‘ =?E‘ E@ B@C@E‘ A‘ A?‘ A ‘ A1‘ GFA @‘ DA @ A?‘ F@‘ DC T A?@C‘ A I = ?@E‘ ‘ I ‘ A J @‘ ?E @‘ J @=? ‘ NGF F‘ E E‘ ?A ‘ =DD@=Cd‘ =?E‘ DC@ @? @E‘ ‘ 1AC‘ D= J @? ‘ GF@?‘ ‘ G=? @E‘ GA‘ AC‘ FC@@‘ E= ‘ A1‘ I@ A J ?>‘ E @;‘ F@‘ A11@C@E‘ A‘ > B@‘ =‘ C 1 @‘ A‘ =EZ ‘ F@‘ E 11@C@? @‘ =?E‘ = ACE ?> ‘ >=B@‘ F@‘ EC=G@@ ‘ 11‘ =‘ F ?>‘ 1AC‘ F@‘ E A ? ; 11‘ F@?‘ E@ C@E‘ F J ‘ A‘ GC @‘ =‘ C@ @ D ‘ A?‘ F@‘ I= <‘ A1‘ F@‘ I ‘ GF F‘ F@‘ E E‘ I ‘ GC ?>‘ F@‘ C@ @ D ‘ ?‘ b @ A?‘ ?‘ F@‘ 1 A ‘ ?= J @‘ A1‘ & A? ‘ ‘ G= ‘ I J @E‘ F= ‘ F ‘ G= ‘ ?A ‘ =‘ C@ @ D ‘ 1AC‘ J A?@ ‘ G F ?‘ F@‘ J @=? ?>‘ A1‘ F@‘ = @‘ 1AC‘ F= ‘ ‘ G= ‘ @ @? = ! A‘ F@‘ AJ J A?‘ A1‘ 1AC>@C ‘ F= ‘ ZF@‘ = ‘ FA E‘ I@‘ EA?@‘ ?‘ F@‘ ?= J @‘ A1‘ =?A F@C;‘ I ‘ F= ‘ ?‘ F@‘ DC@ @? ‘ = @‘ 1AC‘ =? F ?>‘ F= ‘ F=E‘ =DD@=C@E‘ A‘ F@‘ A? C=C ‘ F@C@‘ ?@B@C‘ G= ‘ F‘ =‘ D@C A?‘ @] ?>‘ = ‘ F@‘ 7 & = J ‘ & A?‘;‘H GFA @‘ ?= J @‘ G= ‘ DDA @E‘ A‘ F=B@‘ I@@?‘ 1AC>@E ‘ ‘ G= ‘ = A‘ I J @E‘ F= ‘ F@‘ ?= J @‘ 7 & = J ‘ & A?‘;‘H A E‘ ?A ‘ F=B@‘ I@@?‘ @E‘ G F‘ =?‘ ! !4 ‘ 4‘ # *"6># ‘ I@ = @‘ ?A‘ C@ @ D ‘ = ‘ = ‘ G= ‘ ?@ @ =C ‘ ?AC‘ G= ‘ F@‘ DC A?@C‘ A J D@ =I @‘ A‘ > B@‘ =‘ C@ @ D ‘ =?E‘ F@‘ J >F ‘ = ‘ G@ ‘ F=B@‘ DCA C@E‘ D= J @? ‘ A1‘ F@‘ I ‘ I ‘ GC ?>‘ F@‘ C@ @ D ‘ ?‘ F@‘ ?= J @‘ A1‘ 7 AF?‘ = AC‘ 4‘ = ‘ ?‘ F@‘ ?= J @‘ A1‘ 7 & = J ‘ & A?‘;‘H F@‘ DA @ A?‘ A1‘ F@‘ I ‘ I@ ?>‘ =‘ 11 @? ‘ E F=C>@‘ A‘ F@‘ EC=G@@ ‘ F= ‘ F@C@1AC@‘ = ‘ F@‘ E F=C>@‘ A‘ F@‘ EC=G@@‘ G= ‘ ?A ‘ =? ‘ G= ‘ C@?> F@?@E‘ I ‘ F@‘ C@ @ D ‘ F@‘ DC A?@C‘ F=E‘ > B@?‘ F@‘ @‘ A1‘ F@‘ 1 A ‘ ?= J @‘ GF F‘ G= ‘ ?A ‘ ?@ @ =C ‘ A‘ F@‘ = AJ D F J @? ‘ A1‘ =? ‘ 1C= E‘ G= ‘ A1‘ ?A‘ @11@ ‘ ‘ ?E‘ ‘ G= ‘ 1 C F@C‘ C>@E‘ F= ‘ F@‘ DC A?@C‘ >= ?@E‘ ?A‘ =EE A?= ‘ C@E ‘ I ‘ F@‘ ?= J @‘ F@‘ = J @E‘ ;‘ =?E‘ F= ‘ GF= ‘ F@‘ F=E‘ GC @?‘ G= ‘ =‘ J @C@‘ J @ J AC=?E J ‘ =?E‘ E E‘ ?A ‘ AD@C= @‘ = ‘ =?‘ = b =? @‘ =>= ? ‘ =? ‘ D@C A?‘ I ‘ F@‘ J =?‘ F J @ 1‘ GFA‘ C@ @ B@E

Ww b‘ +&49=‘ 1+=/ ‘ .‘ /+19 ‘ . DG ‘ G‘ +=4 ‘ ‘ 1 ‘ . N ‘ =‘ ID‘ " ‘ NAN ‘ */‘ 6<:) /=‘ +*=2‘ (/&/ ((/ :‘ 42‘ 49/‘ 1+=/‘ 2& /V &‘ 210/44 ‘ " . ‘ " ‘ YI . ‘ ‘ 24/‘ "3b b‘ +=‘ 9+J ‘)‘ : /1 : / :

49+4‘ 49/‘ &2( ) ‘)‘ +‘ ‘ + ; /‘ / 49/ (‘ 2& +‘ (/+*2(2&‘ +‘ & 14 4 2<=‘ " /(=2 ‘ ‘ 7 49‘ ‘ 4/ ‘ 4‘ 42‘ : /P &(+<: ‘ 7 +=‘ &2( ) / (#

F@‘ J A?@ %‘ =?E‘ GFA‘ GA E‘ I@‘ @b = ‘ @ ADD@E‘ I ‘ ‘ = ‘ 1‘ F@‘ F=E‘ G C @?‘ F ‘ AG?‘ ?=J @‘ ‘ F@‘ A I Z@ A? ‘ G@C@‘ AB@CC @E‘ DA?‘ F@‘ >CA ?E‘ F= %‘ = ‘ F ‘ G= ‘ =‘ *6 ‘ " !E ‘ F@‘ = @‘ G= ‘ @=C ‘ G F ?‘ F@‘ = @‘ A?‘ GF F‘ F@‘ ?E J @? ‘ DCA @@E@E ‘ ?E%‘ =1 @C‘ A I @CB ?>‘ F= ‘ F@‘ DC A?@C‘ <?@G‘ F@‘ F=E‘ A I = ?@E‘ F@‘ I ‘ 1C= E T @? ‘ ;‘ F= ‘ F@‘ I@ @C! A‘ @ E@‘ ?b C ‘ =1 @C‘ F J‘ ‘ G= ‘ ?@ @ =C ‘ A‘ A? @= ‘ F ‘ ?= J @‘ ;‘ =?E‘ F= ‘ F ‘ A I Z@ ‘ G= ‘ A‘ E@1C= E‘ F@‘ C@= ‘ AG?@C‘ A1‘ F@‘ I ‘ A1‘ ‘ B= @‘ $ F@‘ A C ‘ F@ E‘ F= ‘ 1‘ F@‘ ? @?E@E‘ A‘ E@1C= E‘ =? I AE ‘ I ‘ F@‘ 1 A ‘ >?= C@‘ ‘ G= ‘ 11 @? ‘ A‘ A? @‘ 1AC>@C ‘ F@‘ Z C ‘ F=B ?>‘ 1A ?E‘ F@‘ DC A?@C‘ > %‘ DA?‘ =‘ = @‘ C@ @CB@E‘ @ @B@?‘ A1‘ F@‘ Z E>@ ‘ ' @C@‘ A1‘ AD ? A?‘ F= %‘ FA >F‘ F@‘ D A=@C‘ E E‘ ?A ‘ >= ?‘ =? ‘ =EE A?= ‘ C@E ‘ I ‘ >? ?>‘ F@‘ ?= J @‘ 7 & ‘ & A?‘ H A‘ F@‘ C@ @ D %‘ = ‘ F@‘ I ‘ G= ‘ ?A ‘ I ‘ F@‘ ?EAC @ J @? ‘ J =E@‘ D= =I @‘ A‘ F@‘ D@C A?‘ GFA @‘ ?= J @‘ G= ‘ @E%‘ @ ‘ ‘ G= ‘ =‘ 1AC>@ ;‘ 1AC‘ ‘ G= ‘ EA?@‘ G F‘ ? @? ‘ A‘ E@1C= E‘ F@‘ C @‘ AG?@C‘ A1‘ F@‘ I %‘ =?E‘ A‘ DC@B@? ‘ F@‘ D@C A?‘ C@ @ B ?>‘ F@‘ J A?@ ‘ 1CA J ‘ I @ ?>Z A‘ C@=E ‘ C= @E%‘ 1!3

F@‘ 1A AG ?>‘ DCADA A?‘ ‘ = @E‘ = ‘ F=B ?>‘ I@@?‘ F@‘ I Z@ ‘ A1‘ J F‘ E 11@C@? @‘ A1‘ AD ? AL$ ` LZ F= %‘ 1‘ =‘ D@C A?‘ > B@‘ =‘ ?A @‘ AC‘ A F@C‘ @ C %‘ = ‘ F ‘ G?‘ ?A @‘ AC‘ @ C %‘ =?E‘ F@‘ C@E ‘ F@C@T DA?‘ I@‘ D@C A?= ‘ A‘ F J @ 1% G FA ‘ =? ‘ C@ = A?‘ A‘ =?A F@C%‘ F ‘ >? ?>‘ F‘ =‘ ?A @‘ G F‘ =‘ 1 A ‘ ?= J @‘ J = ‘ ?E@@E‘ I@‘ =‘ F@= %‘ I ‘ G ‘ ?A ‘ = J A ? ‘ A‘ 1AC>@C ;‘ 1AC%‘ ?‘ F‘ =‘ = @%‘ ‘ ‘ C@= ‘ F@‘ ? C J @? ‘ A1‘ F@' D=C ‘ GFA @‘ = ‘ ‘ D CDAC ‘ A‘ I@%‘ =?E‘ F@‘ C@E AC‘ F=E‘ ?A‘ A F@C‘ @ C ‘ ?‘ B @G HNZd

?‘ A?@‘ = @%‘ GF@C@‘ F@‘ C@E ‘ G= ‘ G FA ‘ EA I ‘ > B@?‘ D@C A?T = ‘ A‘ F@‘ DC A?@C%‘ F@‘ @ C ‘ @?E@C@E‘ I@ ?>‘ A? E@C@E‘ = ‘ I ‘ = A?@%‘ F@‘ Z E>@ ‘ =>C@@E‘ ?=? J A ‘ F= ‘ F@‘ A11@? @‘ = J A ? @E‘ A‘ 1AC>@C ‘ F@‘ DC A?@C‘ G= ‘ ?E @E‘ 1AC‘ @C ?>‘ F@‘ 1A AG ?>‘ ACE@C‘ 1AC‘ D= J @? ‘ A1‘ J A?@ %!<?AG ?>‘ ‘ A‘ I@! 1AC>@E%‘ G F‘ ? @? ‘ A‘ E@1C= E‘ = J @ ‘ A %‘ B

9/""+(:S‘ 1+=/? 32*: / '‘ 42‘ 3/‘ &2()/(# 42‘ :(+7‘ +‘ :(+&4‘ <"2"+‘ 3+'4/('‘ +‘ & 14 4 2<‘ '+ ; /‘ +=<; /:‘ 3# 49/‘ "+(4#‘ +4‘ 49/‘ 4 ;‘ /‘ &2(‘ 49/‘ "<("2=/‘ 2& &(+<:‘ +'‘ :‘ 42‘ +J2 :‘ :/4/1P 4 2'‘ 492<)9‘ 49/‘ 1(/: 4‘ 7/(/‘) J/'‘ 42‘ 49/‘ "/(=2"‘ 2& =<19‘ "+(#

! C@@? C@@ %‘ ‘ %‘ .9

A . !K , C= ‘ D= ‘ A‘ * C‘ RF?‘ < ? %‘ AC‘ I@=C@C‘]‘ 5A ?E ‘]‘ F ?> %‘ B= @‘ C@ @ B@E

7) A C %‘ , ‘ ‘ ‘ #

G ‘ * @ C ‘ CAG?%‘ A ? A?%‘ =?E‘ A %‘ A J I=CE C@@ H

F@‘ DCA @ AC‘ G= ‘ =‘ B@C J F%‘ =?E‘ F@‘ DC A?@C%‘ F=B ?>‘ AA<@E‘ A ‘ @B@C= ‘ >AAE ‘ = ‘ F ‘ FAD%‘ A‘ F@‘ = J A ? ‘ A1‘]‘ > ?@= %‘ D @E‘ A ‘ F ‘ D C @%‘ = ‘ 1‘ >A ?>‘ A‘ D= ‘ 1AC‘ F@ J %‘ = ?>%‘ 7 ‘ I@ @B@‘ F=B@‘ ?A ‘ = F‘ @?A >F‘ = I A ‘ J @%‘ I ‘ F@C@‘ ‘ =‘ EC=1 ‘ A?‘ =‘ I=?<@C%‘ GF F‘ ‘ F@‘ = J @‘ F ?>‘ = ‘ J A?@ %‘ 1AC‘ ‘ G ‘ I@‘ D= E‘ GF@?‘ DC@ @? @E H @‘ = ACE ?> ‘ = E‘ F@‘ EC=1 ‘ A?‘ F@‘ A ? @C%‘ =?E‘ E@ C@E‘ A‘ @@‘ A J @‘ B@C‘ D C ;‘ I ‘ F@‘ DCA @ AC‘ ?A ‘ F=B ?>‘ =? ‘ A1‘ F@‘ < ?E‘ GF F‘ F@‘ E@ C I@E%‘ F@‘ DC A?@C‘ = E‘ F= ‘ F@‘ J ‘ @?E‘ F J‘ =‘ D= C‘ * C‘ A ‘ AA<@E‘ = ‘ F@‘ EC=1 ‘ = ‘ ‘ = ‘ A?‘ F@‘ A ? @C;‘ =?E‘ @@ ?>‘ ‘ G= ‘ DA?‘ =‘ FA @‘ F@

W&D‘ +#*2(S‘ 1+=/‘ .‘ /+19‘ G.I‘ G +=4‘ ‘ ‘ 1‘ .N‘ =‘ IY‘ "‘ NYM‘ <**/(‘ ‘ :2<34/:

"*B‘ '/‘ 2& 49/‘ "('1 "*/=‘ *+ :‘ :27 '‘ '‘ ' ' 'S‘ 1+=/‘ G +=4‘ ‘ ‘ 1‘ .N‘ =‘ IE‘ "‘ NY.‘ J :‘ "‘ YHY‘ ‘ O

R:B‘ ''49/‘ (/"2(4 2& 49/‘ 1+=/‘ '‘ G +=4‘ ‘ ‘ 1‘ .N‘ =‘ AM‘ "‘ NYD‘ 4‘ =‘ =4+4/:‘ 49+4‘ 49/‘ "(=2'/(‘ 7+=‘ ': 14/:‘ &2(‘ &2() ')‘ 49/‘ 2(:/(‘ (23+3*# 49/((‘ 7/(/‘ 12<'4=‘ &2(‘ &2() ')‘ +':‘ &2(‘ <44/(')‘ 49/‘ 2(:/(‘ O'27 ')‘ 4‘ 42‘ 3/‘ =2‘ &2()/:

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F@1A AG ?>C@= A? = @ > B@?= FA @ DA?GF F A E /+=2'=<"2'' =?E F@A F@C Z E>@ !GFA A ? E@E G F F J FA >F F= F@ 79 19 4 7+= = @ =J A ? @E A 1AC>@C F@C@ G= =?= =DD=C@? ! E@ >?1AC 492<)94 49+4 1C= E ?>@?@C= ; =?E F@Z C G@C@ = 1@E F= F@ DC A?@C 49/ &2(/)2 ')1+=/+;2'<4/:' F=E = J@E F@?=? A1 * = A? GF F G= ?A F ?= ?@ ?AC F=E 42 &2()/(# @B@C I@@?@E I F J I@1AC@ I = G= < @ G F ? @? A E@1C= E @E>@ @ F@C@1AC@ J =E@ F@ ?A @ ?@ F@ ?=J@A1 =?A F@C = 1 F AG?=?E @=C G F =?? @? A E@1C= E X & F@ F@C F@C@] @E =D@C A?A1 F= ?=J@AC?A G= J J = @C = F@1@ A? A? @E ?@ F@ ? @? A E@1C= E ?E@C F@1= ?@J >F = J @ =1@ >?@E I=J@ =?E J =<@ =EC=1 ?@ =?E @ ??A @? ; = 1 F@ A?A@= @E F J @1 A =BA E =CC@ =?E F=E =DDA ? @E F 1C @?E A?GFAJ F@ EC@G A D= F I ; AC > B ?> ?A @ AA<=C@ A D= F@J GF@?E @ F@ DC A?@C F=B ?> ?A F ?@ A? C=C A E@1C= E F@ D=C I J =< ?> F@ ?A @ ?E@C F E > @E ?=J@I GF F =1 @C F@ @1 F@D = @ A1 A? @= J@? F@ A E ?A I@ C= @E; F@ = @ =JA ? @E A 1AC>@C F@1@ G= ?A >CA ?E F@ FA >F A E ?> F F 1CAJ F@ AJJA?= @GF@C@ F@ EC=1 J=E@ ?F@! ?=J@ A1 =D@C A?GFA EA@ ?A @] G= ?C@= = E@@D@C 1C= E I@ = @ F@@? A1 F E =G@C GA E = A? @ I@ E =BAG@E = F@ D = @ A1 F DDA @E C@ E@? @; GF@C@= ?A F@DC@ @? = @A1=?A @ F@C@GA E I@?A C J =? @ A1?E A F@J =<@C GF@?F@ b @E F@D = @GF@C@F@ J =E@ F@?A @ F@Z E>@ GFA ? ?@E =>= ? F@ A?B A? G@?A? F@ EA I GF@ F@C A A? @1AC>@C F G= ?A ?@ @ =C F= F@ ? C J @? FA E I@ J =E@= F@ = A1 =?A F@C NAd = ACE ?> A /+=2'= +)+ '=4 49/ 12'# 14 2'

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F@’ ?E ?@? ’ F=C>@E’ F@’ DC A?@C% =J @ ’ & F @ %’G F’ 1AC> ?>’ =’ I ’A1’ @] F=?>@’ 1AC’ %’ E= @E’ = F%’ =? ’ 8 F%’ 9 8%’ EC=G?’ ?’ F@’?=J @’A1’ =J @ ’ * G=CE%’D= =I @’ A’F ’AG?’ ACE@C’ A?’ * @ C ’ @DF@? A?’=?E’ A%’I=?<@C %’ ?’ A?EA?%’G F’ ? @? ’ A’ E@1C= E’ ’ F C A?’; =?E’ ?’=’ @ A?E’ A ? ’G F’ @C ?>’ F’ I ’<?AG ?>’ ’ A’I@’1AC>@E’ F@’ DCA @ AC’G= ’=?’ DFA @C@C’ ?’ = F$ =?E’A?’ F@’ - . F’ #@ % 9 :% F@’ DC A?@C%’I@ ?>’= ’ F= ’ J @’=’ C=?>@C’ A’F J %’ =J @’ A’ F ’FA @%’=?E’ =DD @E’ A’ =<@’ =’ A= F FA @’ =?E’ =I @%’ GF F’ F@’DCA @ AC’ @ ’F J ’1AC’ FC@@’ JA? F ’ C@’DC A?@C’ F@?’I@ DA<@’ AJ@’>AAE ’A1’ F@’DCA @ AC’ A’ F@’ =JA ? ’A1’ ’ - ’GF F’F@’ E C@ @E’ A’I@’ @? ’ A’ F J%’ GC ?>’ F ’E C@ A?’ ?’ F@’ DCA @ ACH ’ IAA<%’7 =J @ ’ * G=CE%’ "A ’ -% 6@? ?> A? D = @%’ = F H ?’ F@’ A C @’A1’ FC@@’ E= ’ F@’>AAE ’G@C@’ @? %’=?E’ F@’DC A?@C’ =J@’ FAC ’=1 @CG=CE ’=?E’ ACE@C@E’ JAC@’ >AAE ’; =?E’ I@1AC@’ = ’ F@’ >AAE ’G@C@’ E@ B@C@E’ F@’ A E’ F@’ DCA @ AC’ A’>@ ’F ’ I ’C@=E ’I ’1A C’AH A <’A?’ E’ FC J = ’@B@%’= ’GF F’ J @’F@’GA E’ = ’1AC’ ’ ’ @’ = @E’= ’ F@’ J @’ =DDA ? @E’; =?E’ F@’ I % =JA ? ?>’ A : ’ % G= ’ > B@?’ A’F J ’ @’ = E’ F@’F ’G= ’B@C ’C >F ; F= ’ ’G= ’F ’ C @’ A’E F=C>@’= ’ I ’ A?’ E’ FC J = ’@B@; =?E’ F= ’ F@’ GA E’C@ C?’ =>= ?’ ?’ @?’ J ? @ %’GF F’F@’ E E%’IC ?> ?>’G F’ F J ’ F@’ I ’A1’@] F=?>@’ ?’ b @ A?’; =?E’ = ?>’ F= ’F@’GA E’ > B@’ F@’DCA @ AC’=’EC=1 ’A?’F ’F=?<@C’ ?’ A?EA?’1AC’ ’ F@’ DCA @ AC’ AA<@E’= ’ F@’I ’A1’@] F=?>@%’GF F’G= ’ ?EAC @E’G F’ F@’?=J @’ 7 =J @ ’ * G=CE%’H=?E% DA?’ F@’ DC A?@C’ = ?>’ ’G=

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?' =?' ?E J @?' 1AC' 1AC> ?>' =?' = @D =? @' A1' =' I ' 1AC' - % ' =DD@=C@E' F= ' F@' D A?@C' AD@?@E' =?' = A ?' G F' F@' DCA @ AC' 1AC' = @' >AAE ' ; F@' C@DC@ @? @E' F= ' I@' G= ' ?' D=C ?@C F D' G F' ' ' & F 11@?% GFA' G= ' F ' ICA F@C ? =G ' F@' '= A ?' G= ' =' J A? F '= A ? % =?E' F@' 1 C ' =?E' @ A?E' G@C@' D= E' ; I ' =1 @C ' !G=CE ' F@' DC A?@C' >A ' ?' =CC@=C% =?E' G=? @E' F@' DCA @ AC' A!' EC=G' DA?' I@' 1 CJ % GF F' = ' = ' F@' A? @? @E' A' EA' F@' I ' ?' b @ A?' G= ' EC=G?% =?E' F@' DC A?@C' = @D @E' ' ?' F@' \=J @' A1' ' ' & F 11@?' =?E' A' & I 11@?' DCAB@E' F= ' F@' F=E' ?@B@C' I@@?' ?' D=C ?@C F D' G F' I@' DC A?@C% =?E' F=E!' ?@B@C' > B@?' F J' =? ' = FAC ' A' @' F ' ?= J @ ' ' G= ' AIZ@ @E' F= ' A' DDAC ' F@

1!3 L(+ '1 =S' 1+=/' ' + ' :' ' ' ')&* /V' ,' 2 '4 /' ' ' ' ' GYM' GMN' + '=& /*: ' ' ' 49/' 9 /&' +(2' ' W]t /V' ,' /+1210' ' ' ' GDE ! (2=/' ' + ' : +7(/ '1/' ' 7/(/' +3=/ '4

=? @ F=E C@= A?=I @ >CA ?E 1AC A I@ @B ?> F@C@ G= >C@= ? J = I@ G@@? F@ @ D=C @ F@C@ F=E I@@? >C@= E@= ?> I@ G@@? F@J GF F A F@ =<@? ? A = A ?) A @C = ? 1 ?E F= F@ JAJ@? * C & AAEJ =? = @E DA? F@ EA@ ?A D= F@ F =?E F@ EA@ ?A ? ? F@ @= =EAD F@ = F= G= EA?@ I F@ DC A?@C F= C@= F@ A? DA ? ? F@ = @163 F@! 5 I @= F , - 3 @ -8 7 1 =? BA @C =??A GC @ F@ F= =11] F J =C< = F@ 1AA A1 F@ BA ?> D=D@C ? F@ DC@ @? @ A1 = B ?@ GFA F= = @ =?E GC @ F@ ?= J @ A1 F@ BA @C =>= ? F@! = J @ , F@ DC A?@C G@C@ ?T E @E 1AC 1AC> ?> =?E @C ?> @C = ?BA ?> D=D@C D CDAC ?> A F=B@ I@@? >?@E ?E@C F DCAB A? =A F@ F=C>@ =>= ? F@J G= F= 1 @ !F=E D F@ J =C< A1 F@BA @C A F@BA ?> D=D@C =?E >?@E F@ C ?= J @ = = @ ?> F@ @ J =C< GF@C@= F@BA @C F=E ?@ F@C D F@ C J =C< ?AC = FAC K@E F@ C I@ ?> D ; I =DD@=C@E F= F@BA ?> D=D@C F=E I@@?1 @E D I F@DC A?@C @ F@C G F F@ @]DC@ AC JD @E A? @? A1 F@ BA @C AC G F F@ A? @? A14 AJ D@C A? GFAJ F@ DC A?@C J >F C@= A?=I I@ @B@ A F=B@ = FAC 1 ; =?E CAJD A? F@C@ DA? E C@ @E =? = b = G= DA I@ F= F@ CC@> 4 =C AJJ @E J >F I@ ?E =I @ ; = G= @=C F@ = @ ? @?E@E F= F@BA @C FA E =11] F : 7 * K I F@ = @ = A? ? F@ JAE@ =EAD @E ? F = @ G= ?A 1AC>@C F@ @ @? @ A1 F@ C J@ A1 1AC>@C J =< ?> = 1= @ @? C AC >?= C@ <?AG ?> 1 d I@G FA = FAC =?E G F ? @? A E@1C= E 1:3 (% ? =? ?E J @? 1AC 1AC> ?> = F@ <1AC - V =DD@=C@E F= F@DC A?@C G= F@ ?bDF@G A1 F@ DCA @ AC =?E F=E I@@? @JT D A @E = F = AC?@ A A?E @B@C= J = @C ? ?GF F F@ DCA @ AC G= @?>=>@E ; =?E A?@ @ @J@? G= DCAB@E A F=B@ =<@?D = @ I F@DCAE A?A1 F@DC A?@CH C@ @ D ; I F@ DCA @ AC =EJ @E F= ?A D= J@? I F= A?@ F=E I@@? J =E@ 1AC =G F=C>@ =?E F= F@F=E C@ @ B@E =? = A ? =?E E@J =?E 1AC - V ? F@ J = @C A1 7 A1 H @]@ AC H ?GF F F@DC A?@C F=E I@@? @JD A @E I F@DCA @ AC =?E F@ F@b @ ?b @ A? F=E F@ GACE 7 A H @]@ AC H GC @? ? F@ J =C> ? ; =?E FAC I@1AC@ F@ @A1 F@ F@b @ F@DC A?@C F=E GC @? F@ 1A AG ?> @ @C A GF F F@DCA @ AC F=E J =E@ ?A C@D ; 7 F= I@ > =E 1 A G @ J@ F=B@ F@GFA @ D=C A1 F@ =JA ? @ J@ F@=C 1CAJ A I C@ C? A1 DA AC B EC=G A? A 1AC F@ =JA ? J@ G= D= E F= =<@ A C @? @ = =? = @? A J C@b] C@J@? ? @ F@=C A F@ A?T C=C H ACE =JDI@ E C@ @E =? = b = N d A GF@C@ A? =? ?E J@? 1AC 1AC> ?> = I A1 @] F=?>@ =DD@=C@E F= F@DC A?@C A? F@ E= A1 F@ E= @ A1 F@ I GF F D CDAC @E A I@ = @D @E I A?@ AG= @ @>C=DF@E A AG=

W:D /) /+(: E M NI
+(=9 E M +(=9 E M
" B /) X +(4=92(Y 2V HNA
" B /) /+(: =+** .L AGN 49 12<(=/ 2& 9 =R / ; "*2# ; / 4 49 "(2=/1<42(9+ :) J/ 42 49 "(=2 / (3*+ O 19/T</= =) / : 3# 9 ; =/*& 42 & ** <" (J 49 =< ; : </ 42 49 1(/ : 42(= 2& 2 / ; 49 +' : +&4/(49 ; +44/(7+ 12 ; P "*/4/ : =/JJ/(+* 2& 49 19/T</ (/ ; + / : / 49 "(=2 / (S 9+ : = + : 9 9+ : & **/ : <" 2 / 2& 49/ ; 7 49 .GM " "+#+3* 42 9 ; =/*& + : '2 /V"(/= +<492(4# 9+ : 3/ /) J/ 3# 49 "(2=/1<42(42 <=/ + # 2& 49 19/T</ +&4/(49 12 ; "*/4 2 2& ; 49S 3<= / =

+(O 2& J24/(= <' : /(49 <3* 1 /+*49 14 +&& V/ : 42 J24 ') "+"/(= <' : /(+ =<"P "2= 4 2 " 2& +<492(4#

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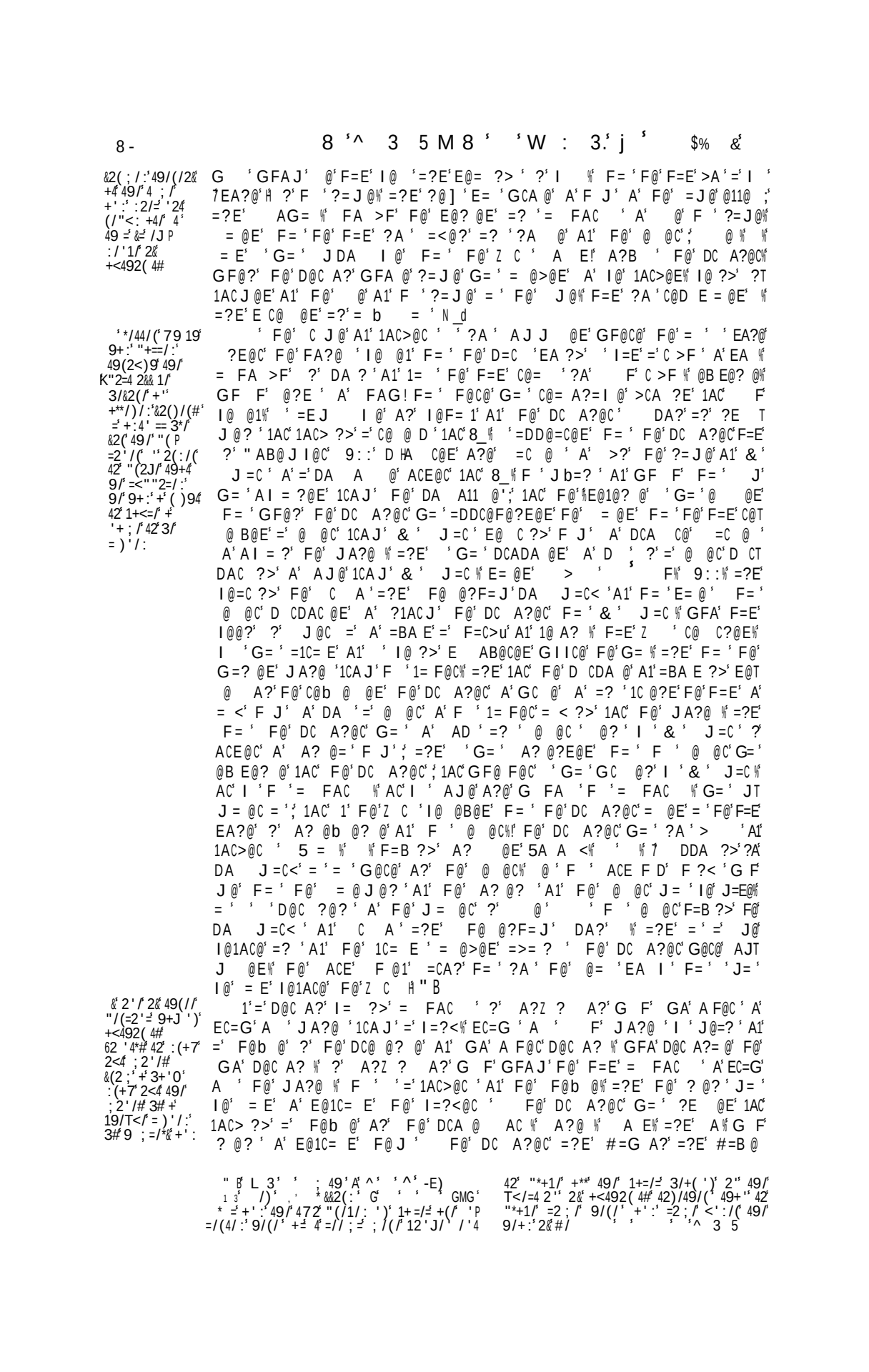

5 + + + U 5 ! 7 3 3 > YHH

G@C@ J @ J I @C A1 F@ EC= 5= <@C H A @ GF F G= @ =IT 472 =1(+')/(- 792 "/(=2'+4/ 49/ 472 9+J ')' +<492(4#' 4 = &2()/(#
F@E 1AC J = ? = ? ?>' F@' J @ J I @C A1' F@' A @ GFA' FA E
I E@DC@ A?' ?' C=E@' AC A F@C C J =? @ I@' FCAG?' A A1'
@ J D A F@'1 ?E A1' F@' A @ G@C@' DCAB E@E' I G@@< A?T
C I A? =?E' =' J A1' : _ G= E@DA @E' ?' F@' I=?<' A1' A?@
A E =?E' A ?' F@' ?=J @ A1' F@' DC A?@C =?E' #=G A?' =?E'
#=B @ =?E' G'= ?A A' I@' D= E' A ? @ = FC@@' = @?E@E' A'
C@ @ B@' F@' I=?<@C G@C@' ?A = b = ? @E' G F' F@' >?= C@
A1' =? A1' F@' FC@@ F@' DC A?@C F=B ?>' DCA C@E' GA' D@C A? A'
D@C A?= @' #=G A?' =?E' #=B @''G@? G F' F@J' A' F@' I=?<=?E'
EC@G'A F@' JA?@ F@' @C<' GFA' D= E' F@' JA?@ = <@E' F@ C
?=J @ =?E' F@' ?=J @ A1' F@' FC@@' J@J I@COV G@C@' > B@?' =?E' F@'
@C<' =1 @C C@1@CC ?>' A' F@' @E>@C =?E' A' F@' D= IAA<GF F' G=
ICA >F I F@' DC A?@C =?E' 1 ?E ?>' F@' ?=J @ A' = ACE D= E' F@'
JA?@ G= AIZ@ @E' F= F@' I=?<@C GA E' ?A I@' =I @'
AB@C A' F@' A @ F@' JA?@ F=B ?>' I@@?' EC=G?' A I 1C= E' I
A?@' A1' F@' E@DA AC 5= @ A?' 7 F@' I=?<@C I@ ?>' = FAC K@E'
A' D= F@' JA?@ A' FC@@' D@C A? ?' D=C =C =?E' A' F@J' A?
D= A' A?@' A1' FA @' D@C A? =?E' A' GA' GFA' =C@' C=?>@C A' F@'
C=? = A? =?E' F= G FA =? = FAC >@? ?@' AC A A C=I @
1CAJ' F@' C@= D=C @ = J' F@C@1AC@' A1' AD ? A?' F= F G= =
1AC>@C G F' ? @? A' E@1C= E' A?@ A E =?E' A' NMd
=B ?>' F C@= @E' A1' F@' ?=J @' ?' GF F' =' 1AC>@C J = I@' =42' 49/
AJJ @E G@' J = DCA @@E' A' A? E@C FAG' 1=C F@' 6 !#! 'B =G J+* : 4# 2& 49/
A1' F@' F ?>' 1AC>@E DDA ?>' G@C@' C @ @ @? = A' 1AC>@C 49 ')' &2()/ : ' &)/'< '/
FA >F = E' A' I@' ?' ?A' G= J = @C = GF@ F@C =' 1AC>@E' ?
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A?' A1' 1AC>@C > B@? = 7 F@' 1= @ J =< ?>' =?' ? C J @?' GF F'
D CDAC 4 < *6 4 *'! A' I@' >AAE' =?E' B= E' 1AC' F@' D CDA @ '1AC'
GF F' G= C@= @E G F' =' E@ >?' A' E@1C= E H 7K3
DA?' F@' >CA ?E' FE ' ' ?A J = @C = GF@ F@C =' 1AC>@E' ? C T
J @?' I@' A' J=E@' = F= 1' G@C@' ?' C F' F' = ' ' A ? @CT
1@ @E' 1AC ' GA E' I@' A1' B= E ' AC ?A ' F= I@@?' =EZ E>@E' F= '
F@' 1AC>@C A1' =' DCA @ A?' ?' F@' ?=J @' A1' ' = I@ ?>' ='
J @ J I @C' A1' D=C =J @? GFA' ?' C F' = F@' J @' G= ?A =' J @ J I @C
= J F' =?' A11@? @' = AJ JA?' =G' = 1' F@' G@C@' A' N d
?' =' = @' GF@C@' F@' E@1@?E=?' G= A?B @E' DA?' =?' ?E T
J @?' ?' F@' 8' K' :GF F' = @E' F= A?@' =C I ' =?E' F '
G 1@' G@C@' @ @E' ?' 1@@' A1' @C = ?' J @ =>@ =?E =?E' @?@ J @? =
= @E' =G <' ?' F@' D=C F' A1' = < A?' ?' @]' =?E' F= F@'
E@1@?E=?' ? @?E ?>' A' JA @ F@J =?E' F@ C' ? @C@ ?' F@' DC@T
J @ 1AC>@E' =' @= @' =?E' C@ @= @' = 1CAJ' =C I ' =?E' F 'G 1@
GF@C@I ' F@ G@C@' DDA @E 1AC' =' B= =I @' A? E@C= A?' A' A?T
B@ A' F J' 7= F= D=C<' = @E' =G <' ?' F@' D=C F' A1' = < A?

!*3' V2 'S' 1+=/' G /7' HDE' ( )94S' W D G +=4' ' M' 1' .N' =' IH' "' NIE'
1+=/' ' /7' .HA' ' "' YGG' 7+= "B # #(/' ' '' 2' /=S' 1+=/' '
1 4/ :' 42' =9/7' 49+4' 49/' 3+' O/(= 7/(/' '24 /+19' HYD
* +3*/' 2J/(' 42' 49/' =21 /4# 7C3 /+0 '=S' 1+=/' ' : .IG' '
"3B ' +7O' ' 1' DM' =' D' G +=4' +7O' ' 1' DM' =' D' G +=4' '
' 1' .N' =' IH' "' NIE 1 .N' =' IH' "' NIE

?' @] ⅋' A? = ? ?>' @ >F ' = C@ ' ?' C J 1@C@? @⅋'G F' = ' F@' E@@C⅋ GAAE⅋' , ⅋' F@C@ A' I@ A?> ?>' 'G= ' J AB@E' ?' =CC@ ' A1'Z E>J@? ⅋' F= ' F@' DC@ J @ ' DDA @E' A' I@' A?B@ @E' G@C@' A' J= @C = ' E 11@C@? ' 1CA J ' FA @' GF F' G@C@' C@= ' F@' @ = @' A1' =C I ' =?E' F ' G 1@⅋' F= ' 1' G= ' J DA I @' F ' A?B@ =? @' A E' @B@C' JA @ ' AC' E C I ' F@ J ' ' F@' A C ' F@ E' F= ' ' G= ' ?A ' ?@ @ =C ' F@C@' FA E' I@' =' F=C>@⅋' AC' =' DA I ' A1' =' F=C>@⅋' =?E' F= ' ' G=' 11 @? ' 1' ' G@C@' EA?@' G F' F' ? @? ⅋' =?E' F= ' F@' Z C ' F=IE' 1A ?E' F= ' ' G= ' EA?@' G F' ? @? ' A' J A @ ' =C I ' =?E' F ' G 1@' ?' F@' DA @ A?' A1' F@ C' =?E⅋' NW d 4

A' GF@C@' =?' ?E J @? ' G= ' 1AC' 1AC>@C ' = ' A J J A?' =G' A1' =' CT C@?E@C' A1' F@' =?E ' A1' ' ⅋' =?E' 'G= ' ?A ' F@G?' ?' F@' ?E J @? ' F= ' ' ' F=E' =? ' =?E ' ; ' G= ' FA E@?' DA?' J A A?' ?' =CC@ ' A1' Z E>J @? ' F= ' F@' ?E J @? ' G= ' >AAE⅋' DA?' F@' DC ? D @' F= ' ' G= ' ?A ' ?@ @ =C ' A' F@G' F= ' F@' D=C ' G= ' DC@Z E @E ' 1 3

DA?' F@' = J @' DC ? D @⅋' F@' EA C ?@' ' @ = E F@E' I ' @B@C=' = @ ⅋' F= ' 1AC>@C ' J = ' I@' A J J @E' I ' F@' 1= @' J =< ?>' A1' =?' ? C J @? ⅋' D CDAC ?>' A' I@' F@' G 'A1' =' D@C A?' GFA' ' B ?>; ?A G F =?E ?>' F@' A IZ@ A?' F= ' E C ?>' F@' 1@' A1' =' D=C ' F ' G ' ' = J I = AC ⅋' =?E' =?' F=B@' ?A' B= E ' = ' =' G= ' ? ' F ' E@= F⅋' NJ d' ?' =?' ?E J @? ' 1AC' 1AC> ?>' =' G ⅋' F@' DCA I= @' A1' F= ' G ' ?C@BA<@E' ' ?A ' A? B@' @B E@? @' A1' ' B= E ' A' = ' A' I@' =' I =C' A' F@' DCA @ A?⅋' 1 3

F@' DC A?@C' GJ ' ?E @E' ?E@C' F@' ' & ' :⅋' ' ⅋' ' ⅋' 1AC' 1AC> ?>' F@' G ' A1' =?@' & =C?@C⅋' =?E' ' =DD@=C@E' F= ' F@C@' G= ' ?A' F' D@C A?' ; A?' GF F' ' G= ' AIZ@ @E' F= ' F@' 1AC>@C ' A1' F@' B⅋ ' A1' =' ?A? @] ?>' D@C A?' G= ' ?A ' =' 1AC>@C ' G F ?' F= ' = @ ' 5= @ A?⅋' ⅋' 7 F@C@' ' ?A F ?>' A' J ' F@LA11@? @' A' F@' 1AC>@C ' A? ' A1' F@' G ' A1' D@C A? ' F= ' F=B@' @] @E⅋' =?E' ' F= ' I@@?' @]T DC@ ' F@ E' F= ' 1AC>@C ' J = ' I@' A J J @E' I ' F@' 1= @' J =< ?>' A1' F@' G ' A1' =' B ?>' D@C A? H NAd

DA?' =?' ?E J @? ' 1AC' ? ?>' =??=F' (F=CE ' A' 1AC>@' =?' =E J ? C= A?' IA?E⅋' ' =DD@=C@E' F= ' ' (F=CE ' F=E' >A?@' A' #A AC 4' A J J A? ⅋' =?E' @]@ @E' F@' IA?E' ?' b @ A?' ?' F@' ?=J@' A1' K=I@ F' @G=C ' ?' ACE@C' A' A I = ?⅋' = 7 @C' =?E' ?@] ' A1' < ?⅋ =E J ? C= A?' A' F@' @11@ ' A1' AF?' @G=C ' F@' IA?E' G= ' = A' @] @ @E' I ' GA' C@ @ ' ?' F@ C' AG?' ?= J @ ' F@' @B E@? @' F@G@E' F= ' F ' G= ' EA?@' 1AC' F@' D CDA @' A1' 1C= E @? ' AI = ?T ?>' @C = ?' A <' =?E ?>' ?' F@' ?= J @' A1' ' @G =C ' = ' F@' J @' A1' F ' E@= F ' ' G= ' AIZ@ @E' F= ' F@' --' , ' - ' ' -⅋' ' ⅋' DCAB E@E' F= ' = ' ACE ?=C @ ' F= ' 7 A1' F@' C@ D@ B@' D@C A?' AC' D@C A? ' A' GFA J' =? ' =E J ? C= A?' ' A' I@' A J J @E⅋' =<@' 11 @? ' IA?E' G F' GA' AC' J AC@' C@ @ ;H =?E' F= ' ?' 1= ' F@' IA?E' ?! b @ A?

L2()/(# ; +# V⅋ 12 ; ; 44/ :' 3# 49/' &+*=/' ; +0 ')' 2& 49/' 7 *# 2& +' * J ')' "/(=2 '' ? 492<)9' +' 7 *# =' + ; 3<*+42(# : <(')' 49/' * &/' 2& +' "+(4#' +' :' 1+ '' 9+J/' '2' J+* : 4# +=' +' 7 *# <' 4 # 9 =' : /+49

(23+4/ '

L2() ')' 49/' 7 *# 2& +' '2' P /V =4 ')' "/(P =2'

'' + ; ; ' =4(+P 4 2 '' 32' :' /V/1<4/ :' '' 49/ (' 4(</' '+ ; /=' 3# 49/' 472' =<(/4 /=' 3<4' '' +' &+*=/' '+ ; /' 3# 49/' "/(=2 '' 42' 792 :' + ; ; 'P =4(+4 2 '' =') (+' 4/ :' =' +' &2()/(#

" !2+4/S' 1+=/' ' L :' +#' ' DHD' <4' 4' =// ; =' 1*/+(*#' 42' 3/' ' /1/==+(# 49+4' 49/(/' =92<*:' 3/' +' "2== 3 * 4# 2&' "(/6<: 1/' 42' 49/' "+(4#' / /' 49/' : /& ' 4 2 '=' ' . y' Y.E' +' :' +(:S' 1+=/' G' +=4' ' z' .N' =' D' "' EYG' ' "' YDH

) * <("9#S' 1+=/' .M 4' (' .EH' W +()(' / : bG' +=4' ' ' 1' .N' =' IH' "' NIN' 4/(* ')S' 1+=/' .' /+19' NN' K 9 ;' 2 '' 49/' 12 ' J 14 2 '' &2(R&2() ')' 49/' 22)+' =' 1+=/' .' /+19' IIN' G' +=4' ' 1' .N' =' IH' "' NIE

W }ℓ /V^b' <44/(#' ' HIG

" B /)' e' J/(#' E' ' ' ' ANY' /7 =S' 1+=/' ' "' YI .' 7+=' 1 4/ :' &2(49/' 1(27X' 9/(/' 7+=' +'249/(' ' : 14P ; /' 4' +)+ ' =4' 49/' "(=2 '/(' 19+() ')' 49/' 4(+' =+14 2 '' +=' +' &+*=/' "(/4/ '1/' 49/' "(P =2 '/(' 9+J ')' (+ =/ :' ; 2 '/# 3# ; /+' =' 2& 49/' 7 **' +' :' 49/' "(=2 '/(' "*/+ : /:')< *4# 42' 49 =' ' : 14 ; /' 4' +' :' 7+=' =/' 4/' 1/ :' <"2 '' 4' +' :' ' 2' =/' 4/' 1/' "+=/ :' <"2 '' 4' +' :' ' 2' =/' 4/' 1/' "+=/ :' <"2 '' S**

G= ' A' =<@?' ;' =?E%' FA >F' ?' ='GCA?>' ?=J@%' F@' IA?E' G= ' =<@?' 1CAJ' F@' B@C ' D@C A?' A' GFAJ' =E J ? C= A?' G= ' >C=? @E%' =?E' F@C@1AC@' G= ' =' IA?E' =<@?' ?' D C =? @' A1' F@' = @'' =?E' ?A ' =' 1AC>@C ' 1' =?' = A?' F=E' I@@?' ICA >F ' DA?' F@' IA?E' =>= ? ' (F=CE ' ?' F@' ?=J@' A1' ' @G=C %' F@' GA E' I@' @ ADD@E' I ' F@C' @]@ A?' A1' ' ?' F= '?=J@' 1CAJ' E@? ?>' F@C' ?=J@' A' I@' @G=C ' C?@ %' %' X& =J %' %' =?E' * = @%' %' G@C@' A1' AD ? A?' F= ' F@' @B E@? @' FAG@E' F= ' F@' IA?E' G= ' 1AC>@E%' = ' '=DD@=C@E' F= ' ' (F=CE ' ?' F@' ?=J@' A1' ' @G=C %' F= '?A ' I@ ?>' F@C' ?=J@' = ' = %' @]@ @E' F@' IA?E' = ' 1' F@''G= ' C@= ' ' @G=C %' NDd

AC> ?>' =' E@@E' G= ' FA E@?' G F ?' F@' -' @A ' -% ' ' 8% ' % L2()/(# 2& '=4(< ; / '4= FA >F' I @b @? ' = @ ' A? = ?' E C@ AC ' DCAB A? ' = ' A' '24 12 '&2(;P ? C J @? % 1AC' Fu' D CDA @' 1AC' GF F' F' 1AC>@E' E@@E' G= ' +3*/'42' 49/' ? @?E@E% I@ ?>' ?' =' D=C =C' 1AC J % AC' AJ D ?>' G F' @C = ?' : (/14 2 '= 2& += C@b @ %' =?E' F@' 1AC>@E' E@@E' F=E' ?A ' I@@?' J=E@' ?' D C =? @' A1' =4+4<4/ F' DCAB A? ' ;' 1AC' F ' E C@ A ' DCAB A? ' F=B@' ?A ' F@' @11@ ' A1' J =< ?>' =' E@@E% ?A % ?' F@' '1AC J' DC@ C I@E%' =?E' G FA ' F@' C@b @ %' = A>@ F@C' BA E% 1 3

DA?' F@' =J@' DC ? D @' = A% A1' ' ?A ' I@ ?>' ?@ @ =C ' F= ' L2()/(# ; +# F@' ? C J @?' F=C>@E' A' I@' 1AC>@E% FA E' I@' F'=' GA E' I@' 3/' 12 ; ; 44/ :' @11@ =' 1' ' G@C@' =' C @' =?E' >@? ?@' ? C J @? % ' F= ' I@@?' 2& +'' '=4(< ' FA E@?' F=' 1AC>@C ' J=' I@' AJ J @E' A1' =?' ? C J @? ' A?' ; / (4 2 '' <'P > 6&E #' D=D@C =4+ ; "/ :' "+"/(

F@' DC A?@C' I@ ?>' ?E @E' 1AC' 1AC> ?>' =' I ' A1' @] F=?>@% =?' AIZ@ A?' G= ' =<@?' A?4' I ' I@F= 1% F= ' F@' I ' ?' b @ A?' G= ' ?A ' =J D@E' D C =?' A' F@' - -' @A ' % ' ;' - ' @A ' % ' : % ' :' ;' =?E' - ' @A ' % ' 89% ' ' ;' NCd' =?E' F= ' ' &=' ?A % F@C@T 1AC@%' =' =G1 ' I ' A1'@] F=?>@% I ' =' D @ @' A1' G= @' D=D@C' ? =D=I @' A1' I@ AJ ?>' F@' IZ@ ' A1' @ F@C' 1C= E' AC' 1@ A? ' ;' F= ' F@' D=C ' GFA' AA<' ' J ' = ' F@' J @' F=B@' <?AG?' F= ' ' G=' ?A ' =' u>=' I ' A1' @] F=?>@% AC' F@' J ' F=B@' I@@?' >CA ' ?@> >@? % F@' E@1@ ' I@ ?>' B I @' A?' F@' 1= @' A1' ' @C% % AB@CC @E' F@' AIZ@ A?d' A?' F@' >CA ?E' F=' F@' =J D' ' G@C@' J @C@ ' C@B@? @' =G % =?E' E' ?A ' D CDAC ' ?' =F ' G=' A' = @C' F@' C J @' A1' 1AC>@C ' ;' =?E' F=' Fu' 1= @' ? C J @? ' F=E' F@' @J I =? @' A1' =' I ' A1' @] F=?>@% =?E' G=' ?@>A = @E' I ' F@' DC A?@C' = ' F ?E% A?' =' = @' C@ @CB@E% F@' Z E>@ ' G@C@' = ' A1' AD ? A?' F= ' F@' DC A?@C' G= ' DCAD@C ' A?B @E% N d

F@' DA ? ' ?E@CG@?' J F' A? E@C= A?%=?E' G= ' E@I= @E' I 2*:/ '' 49+4 F@' b @ A?' ?E@CG@?' 1 C F@C' E A?' =1 @C' F@' ' @A ' % &2()/(# ;)94 ' -8% ' % F=E' DCAF I @E' F@' =J D ?>' A1' =' I ' AC' ?A @' =1 @C' F@' 3/' 12 ; ; 44/ :' J @' A1' F@ C' I@ ?>' J=E@' F@' DC A?@C' G= ' ?E @E' 1AC' @ ?>' 2& +' "(2' =' 1AC>@E' DCAJ AC ' ?A @% GF F% A?' I@ ?>' DCAE @E' ?' @B E@? @% , ; =2(# '24 =DD@=C@E' A' F=B@' I@@?' EC=G?' A?' ? =J D@E' D=D@C' ;' =?E' F@' = @' G= ' =B@E' 1AC' F@' AD ? A?' A1' F@' Z E>@ % = ' G@ ' A?' F@' DC ? D= ' DA ? ' = ' A?' F@' ' @A ' % ' -8% ' % GF F' D= @E' =1 @C' =65F ' 544#(' 6 ' =?E' DCAF I @E' F@' =J D' A' I@' =1 @CG=CE ' =11]@E F@' b @ A?' ?E@CG@?' J F' A? E@C= A?%=?E' G= ' E@I= @E' I

"; B /)' ,' +(3/(' :' ' ' ' IHI' /&&/14 49+4 '2'3 ** 2& /V19+')/' 1' '24 9/ =4+4/ ; /' 4 9/(/ =' ; 2(/ 12((/14 49+' =4+ ; "/ :' += 49/=/ 14= : (/14' =9+** 3/' 49+4 ' ' ' ' 9/"2 '4 =' +*42)/49/(' "*/+ : / : ' 2( ) J/ '' '' /J : / '1/ ' ' 5' ; =(/"2(4/ :' '' :' 2V' ' 'YG' /)' &' 12<(4' 2(+: ; 44/ :' '' 5' 12<(4 42' 3/ 19+(:=)22 :' 2(+J+ *+3*/ '' *+7'2(/T< 4# 7 3' /V ,' #2' ' ' ' ' GAA' +' :' " B +70/=722 :S' /+=/' :' /+19' GAD' =/ /=' &' L(2' :' ' ' ' HEN' G +=4' ' '1'K.N' =' IA' "' NAA' //S' " B 9/' "(2J = 2' =' 2& 49/ 14=+(/ 42' 49/ 1+=/' :' /+19' GAE' '24/' W+b

!A!ᶠ 8 ʻ^ 3 5 M 8 ʻ ʻW 3.ʻ ʻ $% & J

F@ʻZ E>@ ʻ ?ʼ F@ʻ A C @ʻA1ʻ @B@C=ʻ @CJ ʻ GAʻ ACʻ FC@@ʻ A1ʻ F@ʻ Z E>@ ʻEA I @Eʻ=ʻ1 C ʻ F@ʻDCADC @ ʻA1ʻ=6 < ! 44#Pʻ & ʻ 1ʻ F@ʻ J = @Cʻ G@C@ʻ " ʻ 2"6ʻ @ʻ F@ ʻ= ʻ =>C@@Eʻ F=ʻ F@ ʻJ ʻ I@ >AB@C?@Eʻ I ʻ F=ʻ = @ℍ=ʻ ʻG=ʻ=?ʻ= FAC ʻ ?ʻ DA ? ;ʻ =?Eʻ F=ʻ F@ʻ ʻ @Aʻ ℍ ʻ-8ℍ ʻ ℍ J=E@ʻ ?Aʻ E 11@C@? @ʻ ?ʻ F@ʻ b @ A?ʻ ?Eʻ JA ʻA1ʻ F@ʻZ E>@ ʻJ=?=?@Eʻ F@ʻDC? D @ʻ ?ʻD65 544#Pʻ 6 ʻ Aʻ I@ʻG@ ʻ1A ?E@Eʻ;1ACʻ F@ ʻF@ Eʻ F=ʻ F@ʻ ʻA1ʻ5=C =J@?ʻ GF Fʻ F=Eʻ I@@?ʻ C@1@CC@Eʻ Aʻ =?Eʻ C@ @Eʻ A?ℍ I@ ?>ʻ J@C@ʻ C@B@? @ =G ℍ J@=?ʻ Aʻ J=<@ʻ ?Aʻ= @C= A?ʻ ?ʻ F@ʻ C J@ʻ A1ʻ1AC>@C ℍ I ʻ A? ʻ Aʻ DCAB E@ʻ F=ʻ F@ʻ ? C J@? 7FA Eʻ?Aʻ I@ʻ=B= =I @ʻ1ACʻ F@ D CDA @ʻ A1ʻC@ AB@C ?>ʻ A?ʻ ʻ ?ʻ=ʻ A C ʻA1ʻZ @;ʻ I ʻ ʻJ >Fʻ I@ C@ @ B@Eʻ ?ʻ @B E@? @ʻ!1ACʻ A =@C=ʻ D CDA @ʻ;ʻ=?Eʻ F@ ʻ ? =? @Eʻ F@ʻ Fʻ=?Eʻ Fʻ @ A? ʻA1ʻ F@ʻ ℍGF Fʻ J=E@ʻ F@ʻD=C ʻEC=G ?>ʻ Fʻ=ʻI ʻ =I @ʻ Aʻ F@ʻ = @ʻE @ ℍ=?Eʻ Aʻ =ʻ D@?= ʻA1ʻ ;ʻ ?ʻIA Fʻ GF Fʻ = @ʻ F@ʻI ʻJ ʻI@ʻ @Eʻ ?ʻ @B E@? @ʻ ?Eʻ F@ʻ A? E@C@Eʻ F=ʻ ?ʻACE@Cʻ Aʻ A? @ʻ 1AH▶@C ʻ ʻG=ʻ?Aʻ?@ @ =C ʻ F=ʻ F@ʻ ? C J@?ʻ FA Eʻ I@ʻ=B= =I @;ʻ F=ʻ FA >Fʻ=ʻ AJD AC ʻ D= J@? ℍ I ʻ A C @ʻA1ʻ =GHH A Eʻ?Aʻ F=B@ʻ I@@?ʻ @?1AC @Eʻ1ACʻ G=?ʻ A1ʻ F@ʻDCAD@Cʻ =JDℍ @ʻ=ʻJ=?ʻ J >Fʻ @b = ʻI@ʻ E@1C= E@Eʻ I ʻ=ʻ YBA ?=C ʻD= J@?ʻI@ ?>ʻ A ʻ Aʻ F J ;ʻ F=ʻ 1ʻ F ʻG@C@ʻ=ʻ 11 @?ʻ E@1@? @ℍ 1AC>@Eʻ @ C @ʻJ >Fʻ I@ʻD I F@Eʻ A?ʻ JDCAD@Cʻ =JDʻ YG Fʻ JD ? ℍ GF Fʻ GA Eʻ =CC ʻ F@ʻ J F@1ʻ 4ʻ=?ʻ=C J ?>ʻ @] @? ;ʻ F=ʻ F@ʻ =JDʻ @ 1ʻJ >Fʻ I@ʻ1AC>@E;ʻ=?Eʻ ʻGA Eʻ I@ʻ=ʻ C=?>@ʻ E@1@? @ʻ Aʻ=EJ ʻ ?ʻ=ʻ A C ʻA1ʻZ @ℍ F=ʻ I@ = @ʻ=ʻJ=?ʻ F=Eʻ 1AC>@Eʻ F@ʻ =JDʻF@ʻA >Fʻ Aʻ II ʻ @] @Eʻ 1ACʻ F=B ?>ʻ 1AC>@Eʻ F@ʻ?A @ʻ @ 1ℍGF Fʻ G!A Eʻ I@ʻ @ ?>ʻ Dʻ A?@ʻ 1C= Eʻ ?ʻ ACE@Cʻ Aʻ DCA @ ʻF J ʻ1CAJ ʻ F@ʻD ? FJ@?ʻE @ʻ Aʻ=?A F@Cℍ 1 3 Aʻ GF@C@ʻ ʻ =DD@=C@Eʻ F=ʻ F@ʻ 1AC>@C ʻ F=C>@Eʻ =>= ? ʻ F@ʻ DC A?@Cʻ G=ʻ F@ʻ= @C= A?ʻA1ʻ=ʻ ʻ I ʻA1ʻ @] F=?>@ʻ ? Aʻ A?@ʻ 1AC ʻ ʻG=ʻ FA E@?ʻ Aʻ I@ʻ?A ʻ @ ʻ=ʻ1AC>@C ʻ1CAJ ʻ F@ʻ C J =? @ʻ A1ʻ F@ʻ I ʻF=B ?>ʻ I@@?ʻ C@ @Eʻ FC@@ʻ J @ ʻ=ʻ=ʻ ʻ I ʻG FA ʻ I@ ?>ʻ C@ =JD@Eℍ =?Eʻ I@ ?>ℍ F@C@1AC@ℍ ?A ʻ=B= =I @ʻ ?ʻ=ʻ B ʻ = A?ʻ=ʻ F@ʻ J @ʻ F@ʻ= @C= A?ʻ ?ʻ ʻA1ʻ ʻ ? Aʻ8 ʻG=ʻ@11@ @Eʻ F@ʻZ E>@ ℍ A?ʻ=ʻ A?1@C@? @ℍ =Eʻ 1F=ʻ ʻ F=Eʻ I@@?ʻ E@ E@Eʻ F=ʻ F@ʻ =JDʻ ʻF=Eʻ?Aʻ C@ = A?ʻH Aʻ F@ʻ bF@ A?ʻ A1ʻ1AC>@C ;ʻ=?Eʻ F=ʻ DDA ?>ʻ F@ʻ ? C J@?ʻ1AC>@Eʻ Aʻ I@ʻ Fʻ A?ʻ F@ʻ 1= @ Aʻ ʻ =ʻGA Eʻ I@ʻB= Eℍ DCAB E@Eʻ ʻF=Eʻ=ʻDCAD@Cʻ =JDℍ F@ʻ2&&/ʻ1/ʻG=ʻ AJD @ @ʻ NQd

9/ʻ=+ ; /ʻ :214(ʻ/ʻ+14/ :ʻ <"2ʻ ʻ249/(ʻ 1+=/=

?Eʻ ʻ ʻG@ ʻAI @CB@Eʻ F=ʻ 1ʻ F@ʻ J = @Cʻ I@ʻE ʻ A? E@C@Eʻ F@ʻ GACE ʻA1ʻ F@ʻ =JDʻ ʻI@1AC@ʻJ@? A?@Eʻ =?ʻA? ʻI@ʻ=DD =I @ʻ Aʻ =ʻ C @ʻ ? C J@? ;ʻ 1ACʻ=ʻ1AC>@Eʻ ? C J@? ℍ GF@?ʻE AB@C@Eʻ Aʻ I@ Fℍ ?@B@Cʻ =?ʻ I@ʻ J=E@ʻ=B= =I @ℍ FA >Fʻ =JD@E;ʻ=?Eʻ F=ʻ F@ʻ ℍ F@C@1AC@ℍ =?ʻ A? ʻ I@ʻ ?E@C AAEʻ=ʻC@b C ?>ʻ =JDʻA?ʻ Fʻ ? C J@? ʻ=ʻG@C@ʻ=B= =I @ʻ G FA ʻ =ʻ =JDʻI@1AC@ FA @ ʻ D= @Eℍ =?Eʻ GF Fʻ GA Eʻ I@ʻ=B= =I @ʻ =1@CG=CEʻG Fʻ=ʻ =JDℍ 1 3

ʻ"2=4 :+4/ :ʻ 19/T</ʻ

Aʻ GF@C@ʻA?ʻ+'ʻ ?E J@?ʻ1ACʻ1AC> ?>ʻ=?ʻ ACE@Cʻ1ACʻ F@ʻD= J@?ʻ ZA?@ Zʻ F@ʻ ACE@Cʻ G=ʻ=ʻ I=?<@CHʻ F@b @ℍ E= @Eʻ F@ʻ - Fʻ A1 > ℍ I ʻ @C@Eʻ I ʻ F@ʻ DC A?@Cʻ A?ʻ F@ʻ -9 Fʻ A1ʻ > ℍ C@ G@ ℍ ℍF@ Eʻ F=ʻ F@ʻ = @ʻG=ʻG F ?ʻ F@ʻ ʻ & ʻ:ℍ ʻ ʻN Ad

1 3 *2(42'Sʻ 1+=/'Gʻ +=4' ʻ ʻ1ʻ .N' =ʻIA'"ʻNAA

+J /=Sʻ 1+=/'Gʻ /+19'DMD'ʻ'24/'Wʻ Gʻ +=4'"ʻ !'1'.N'=ʻIA'"ʻNAY

"Bʻ /+)</Sʻ 1+=/'Gʻ +=4'ʻ ʻ1'.N' =ʻAA'ʻ MDN' /)' O/'Gʻ &22'ʻ ʻ DM' /1<*=&ʻ /+=/'Gʻ /+1*'DMH

W(bʻ Gʻ +=4' .¯? ʻ1'.N'=ʻIA'"ʻNAY' W7bʻ /)' ,ʻ +#*2(' ʻ ʻ ʻ ʻG.H' (/==7/ ʻ ʻ =+ :'0 4'7+=ʻ+'"2(:/(&2(

F= I@@?DA<@?A1= ==J=@C= C J =?@F= F@1=@ ?C J@? FA E =CC A?F@1=@A1 F@@JI=?@A1 F= 1AC GF F A ?@C1@ @E 1?3 ?A ?@ @ =C F= F@ C@ @JI=?@A F@<?AG?? C J@? FA E I@@]= $ @@J A I@ 11 @?1 F@ ? C J@? I@ A1=C= <@ F= D@C A? ?>@?@C= ?>F@ C ACE ?=C AI @CB= A?DA?F@ IZ@ J= I@ JDA @E DA?I F@E@ @D A? FA >F GA E ?A JDA @ DA? D@C A? F=B ?>D=C =C@]D@C@? @ ?F J= @C 1!;3

F GF@C@F@ DC A?@C G= ?E @E 1AC F@ 1AC>@C A1 I=?< ?A @ =?E= G ?@ 1AC F@ DCA @ A? GFA =JG 1CAJ F@ =?< A1 ?>=?E = @E F= F@ A E ?A F=B@I@@?EJDA @E DA?I F@1AC>@E ?A @ F@E11@C@? @I@G@@?F@J=?E F@C @?A@ I@?>A F J B@C DD=C@??@B@C= D=C =C I =DD@=C@E F= A F@C F=E I@@?E@ @B@E= 1C I F@J 1AC@>A ?>DC? D@ 183

F@EA C?@F=E DC@B A I@@?=? A?@E I F@AD?A?A1 F@Z E>@ ?F@1A AG?>= @ F@DC A?@C G= ?E @E 1AC 1AC> ?>= I=?< ?A @A1 F@1A AG ?>@?AC;`

7"A . .
7 DCAJ @ A D= * C A CAA< AC I@=C@C A?E@J=?E F@ J A1 1

7 A?EA? - ? ?@ ..8
7 AC F@ DABC =?E AJD=? A1 F@ =?<A1 ?> =?E
7 ? E / : Á & # 0

F@1 1 F A ? GFZ F G= F= A?GF F F@ b @ A? C?@E = @>@E F= F@DC A?@C 7E Z 1AC>@6 "6! E"4&! 4"' 4 *4" < (E6'& 4*&4 'G F F@?=J@A1F<4&6 F<4&E 4 F@C@ ?A I C I@E D CDAC ?>A I@=C E= @ , =?E A F=B@I@@? >?@E I A?@F<4&6 F<4&E 4 1AC F@>AB@C?AC =?E AJD=? A1 F@ =?<A1 ?> =?E 1AC F@D= J@?A1 8 A *C A @DF CAA< AC I@=C@C A? E@J=?E F@ @?AC A1 GF F , G F ?@? A? A E@1C= E @>AB@C?AC =?E AJD=? A1 F@ 6 4* U 2 6 #(=DD@=C@E F= F@?A @F=E ?@B@C I@@?D I F@E I@ ?>1A ?E ?F@DC A?@CH DA @ A? = F@ J@F@G= DDC@T F@?E@E ; I F@1AC>@C G= ICA >F FAJ@A F J =?E FA G= A?B @E F@A11 @C A1 F@ =?<A1 ?> =?E DCAB@E F= F@ ?A @G= ?@B@C C@ D@ IA F ?D=D@C =?E DC ? J =C A= I=?<?A @ IA F ?F@ GC @?=?E DC ? @E D=C A1 @] @D 1C F= F@ ? JI@C G= ?A1 @E D ; @A?E F= F@GACE 7DA ?E H G= AJ @E ?F@ IAE A1 F@?A @ ; F CE F= F@ @] C@A1 F@ D=D@C G= C= F@C F <@C F=?F= @E I F@ I=?<; =?E 1A C F F= F= ?F@1=IC A1 F@G= @C J=C<B K F@GACE 7 =?<A1 ?> =?E H G@C@?A ? @C @E; I F@ = E F= =I=?<?A @ G F =<@AJ A?A1 F@GACE 7DA ?E H ?F@ IAE A1 I@?>C@> =C ?A F@C@D@ GA E I@D= E I F@ =>@A1 F@I=?= 1 @C F=E D= @E F@@]=J ?@CH A11 @ ?E

49 "+# ; ' 2 ; 2 ' /# 7 49 ''49 =4+4<4/ ' +' :49+4 42 ; +0 4 =<19 4 7+= '24 ' /1/==+(# 49+4 49 "+(4# =92<*:'3 92<' :42 "+# 4 +4 2 '1/ &) / '< ' / S "0 J :" YAH

BA? '

5B G +=4 1 .N = Y' " EAE' +' :=' II' " NAM
"V 22=4 1+=/ G +=4 1 .N =' II' " NAM

5

9 &+*=/ 'P =4(<; / '4 =92<*:' 1+((# 2'' 49 &+1 2& 4 49 =/ ' ' 9*+' / 2& 49+4 &2(79 19 4 = 12<'4/(&/ 4/:' ? =2 +=42 :/P 1/ J "/(=2' = <= ') 2(: '+(# 23=/(J+4 2'

'12'J 14 2'' =)22:' &2(&2() ') + 3+'0 '24/' 492<)9 '' =<19 &2()/:' '24/ 49 72(: 0"2<' :=$9 2 ; 44/:' +' :' 492<)9 49/(/ 9 '2 7+4/(P ; +(0 '' 49 "+"/(

=' C@= ' I=?<' ?A @' A1' F@' =J @' E= @' =?E' @?AC% @] @D ' = ' =IAB@ @] @D @E% G= ' DCAE @E' ?' @B E@? @ ' 'G= ' A? @?E@E' F= ' F ' G= ' ?A ' =' ?A @' C@ @ J I ?>' =' I=?<' ?A @' 1AC' G=?' A1' F@' 56 "0 & 6" 'G =?E' = A' F= ' 'G= ' ?A ' =' ?A @' 1AC' *!* ' 'E4> # ' F@' GACE TE4> # 'P I@ ?> AJ @E' % I % A?' =' = @' C@ @CB@E% F@' Z E>@ ' G@C@ A1' AD ? A?' F= ' F@' A?B A?' G= ' C >F ';' = ' ?' 1AC>@C ' F@C@' ?@@E ?A ' I@' =?' @]= 'C@ @J I =? @% =?E' ' ' 11 @?' 1' F@' ? C J@?' 'E"!& 6'*6 # '1 @E' A' D= '1AC' =' C @' ? C J @? ' F@' J=ZAC ' A1' F@' Z E>@ ' ? ?@E' A' F ?<' F= ' F@' AJ A?' A1' F@' GACE 7DA ?E 'H ?' F@' IAE ' A1' F@' ?A 1@% F=E' ?A F ?>' @ @' =DD@=C@E% GA E' ?A ' F=B@' @] D= @E' F@' DC A?@C';' =?E' F= ' ' G= ' =' J= @C A' I@' @1 ' A' F@' Z C % = ' 'G= ' EA?@% G!F@ F@C' 'D CDAC @E' A' I@ =' ?A @' 1AC' 1 1 ' E4> # ' AC' =? ' A F@C' J';7 =?E' = ' F@' Z E>@ ' =>C@@E' F= ' F@' 71 1 'H ?' F@' J=C> ?' A1' ' C@ J AB@E' @B@C 'EA I % =?E' F@G@E' F= ' F@' 1 1 ' ?' F@' IAE ' A1' F@' ?A @' G= ' ? @?E@E' 1AC 1 1 ' E4> # ' 163

')(+J ')' +' 12<' 4/(&/ 4' =4+ ; "' * 0/' '' =2 ; /' "+(4' 42' +')/ '< ' /' =4+ ; "' ' +' :' ' ' * 0/' '' 249/(=' +' :' 49/ '' 1<44 ')' 2<4' 49/' < ' * 0/' "+(4=' +' :' 12 ' 1/+* ')' 49/' "+(4' 1<4' 2<4 ' +' :' 49/ '' <44/(')' 4 ' =' +' &2()/(# +' :')< *4#'<44/(')

DA?' F@' =J @' DC ? D @ % ?' =' = @' GF@C@' F@' DC A?@C' @?>C=B@E' =' A ? @C1@ ' J @E ?@' =J D% A' =' A' I@' <@' A' =' >@? ?@' =J D' @] @D 'A? ' F= ' F@' @? C@' D=C % GF F' ?' =' >@? ?@' =J D' D@ 1@ ' =?E' E@?A @ ' F@' E % G= ' I =?<' ?' F@' 1 C ' ? =? @% I ' 'A ' I@1AC@' F@' A ? @C1@ ' =J D' G= ' @E% =' D=D@C' G F' F@' GACE ' 7 A?@ % C A %H A?' ' I@ ?>' D= @E' AB@C' F@' B= =? % =?E' F@?' @C@E' F' A ? @C1@ ' =J D% 'G= ' FA E@?' F= F@' G= '> ' A1' =' 1AC>@C ' =?E' @C ?> ' CA @% % ?' E@ B@C ?>' F@' AD ? A?' A1' F@' G@ B@' Z E>@ 'A?' F ' = @% =1 @C' = ?>! F= ' 'G= ' DCAB@E' F= ' FA @' D=C ' A1' F@' A ? @C1@ ' =J D' GF F' C@J = ?@E' G@C@' =' D@CT 1@ 'C@ @J I =? @' A1' F@' =J @' D=C ' A?' =' >@? ?@' =J D% =?E' F= ' F@' GFA @' G= ' 6'*6<t# 6 !4 ' 4'6" *> ' ' 4 "! #' 6 ' 4' : ' ! ' ' 4' # ! ' < ' ' '4 *' "' ' 4"<&4 '4< !("' 1 C F@C' = E% 7B ' ?6 ' " & : 6 '4"' 1= ' J @' ! ' 4 '" >!" #' 4' 4 ! > ' < ' "!& '4* *4"2 "' 'G' *4"' ! *' < " ' : '6' >*!! ! ' " & : 6 ' 4' < 5' #6?' 6' *6 '& 6 ! 2' 5 6 '! # #' 6 #' <6 ' < '*6 ' 6&E' ! ' 4' &6#' 6 ' 4' <6 ' 6 ' 6E ! >#' 4' # ! ' <6 ' ! ' >*! ! "#j N d 'F=' I@@?' E@ @C J ?@E' A?' F@' -8' EG ' %7 = ' 8% ' -% F= ' D ?>' F@' >C@= ' @= % =?E' A ?>' '=>= ?' A' =' 1= @' D= @? % ' =' A ? @C1@ ?>' A1' F@' @= '$ N d =?E' F= ' GF@C@' F@' @= ' ' I =? = ' A ? @CT 1@ @E% F@' =EE ?>' AC' A J ?>' A1' =' CAG?% F@' @=B ?>' A 'GACE' ?' F@' @% AC' =EE ?>' A F@C % AC' J =< ?>' =? ' A F@C' J ? @' B=C = A?' ?' Fp' A ? @C1@ % GF F' ' A1 @?' EA?@' D DA @ % =?E' I 'G= 'A' @ E ?>' F@' =G% G '?A ' = @C' F@' = @% NEd

' ; /((/' * 4/(+' ; =4+0/' K] ** '24' ; +0/' +9#' : &&/(/'1/

?E' ' @@ J ' F= ' =' J @C@' @C= ' J =<@' ?' F@' 1C=J ?>' A1' F@' X ? C J @?' @ 1% G @ ' = E' ?' F@' ?E J @? % G ' ?A ' J=<@' =? ' E 11@C@? @' ?E' ' 'A I @CB@E' F= ' ?' =' = @' GF@C@' F@' DC A?@C% ?' 1AC> ?>' =?' ACE@C' 1AC' F@' E@ B@C ' A1'>AAE % I ?E@C@E' ?' D@ ?>' F@' ?= J @% ?>' M &4 ?' 1AC' M 4"& 6>?' ?A' C@ 'G=' = E' A?' F' C J =? @% FA >F' A?' A F@C' >CA ?E ' F@' ?E J @?' G=' FA E@?' I=E' 1 3

" B' ** 24$' 1+=/' .' /+19' .DA' G' +=4' ' ' 1' .N' ='))' " ' NA.' G' /7' NH' '24/' W]b' /' ! (/#' M ' '+' :' ; #49/' ' ' 7/(/' +3=/' 4 " B' 2** 1244$' 1+=/' G' /+19' .MIE') +<' 4' HMM' ' ' 'G.G' GGN W1b' .' +*/' .DE' .EI " B' 23 '=2' $=' /+=/' G' 2** ' AM' .' +=4' ' M' 1' G' =' GA' " ' EY' 9 =' 7+= +'' ' : 14 ; / '4'<' : /('49/' .' +(#' 1' Y' &2(12<' 4/(&/ 4 ')' 49/' " (J# =)' /4' '' +=4' % ' 4' =' =+ : ' 0 9/' : =" +(4#' 927/J/(' ; +# 9/' =2 /+4 3/47//'' 49/' 4(</' +' :' &+*=/' =/+# 49+4' 4' 72<' :' '24' + ; 2<' 4' 42' +' 12<' 4/(&/ 4 ')' 7 49 '' 49/' =4+4<4/' +=' &' 4' 3/' /J : / '4' 42' 49/' J /7' 2& /J/(# ; +' $=' /#/' S ' G' +=4' ' ' 1' .N' =' 9 ' "" ' NAG

F@ DC A?@C K>@C= E =?E @@ G@C@ ?E @E 1AC 1AC> ?> F@ = G =?E @ = J @? A1 5@ @C 5@CC = @ != @= J =?' A?' IA=CE F * =Z@ H F D F@ =? = @C G F ? @? A E@1C= E F@ 6 ?> F@ G I@>=? ` ! ?' F@ ?= J @ A1 AE J @? N "' 5@CC H

F

, =?E @?E@E 7 AF?' 5@CC H F@ DC A?@C K>@C= E =CC @E

J =C<

F@ G A' F@ A11 @ A1 F@ E@D C@> C=C GFA A?' A I @CB ?> F@ E 11@C@? @ A1 F@ FC =?' ?= J @ A E' F J F= F@ J = DCAE @ F@ D@C A?' GFA F=E' GC @?' F@ G AC F@ D@C A?' GFA G= DC@ @? GF@?' G= @] @ @E ?' ACE@C A' = A ?' 1AC F @CCAC I@1AC@ F@ DCA I= @ A E' I@ >C=? @E K>@C= E' = ACET ?> DCAE @E' F@ A F@C DC A?@C @@ GFA ?' F@ ?= J @ A1 & @ F GAC@ F= F@ G= A?@ A1 F@ I C I ?> G ?@ @ ' F= F@ ?= J @ A1 F@ E@ @= @E G= 5@ @C 5@CC F= F@ = E 5@ @C 5@CC E E J =<@ F J =C<' A' =?E' E@ B@C F@ = E G ' =?E' F= F@ N & @ Fd I J =<@ F=E' GC @4 F@ ?= J @ AF?' 5@CC ? @=E A1 5@ @C 5@CC DA?' F =' DCA I= @ A1 F@ G G= >C=? @E F@ DC A?@C F=B ?> I@@?' 1A ?E' > F@ b @ A?' G= C@ @CB@E GF@ F@C F G= ?' F@ =G =' 1AC> ?> A1 F@ G A1 N "' 5@CC = = E' ?' F@ ?E J @? V ?E FA >F' ?A' AD ? A?' G= @B@C D IT E@ B@C@E F@ DC A?@C G@C@ =1 @CG=CE @] @E D C =? A F@ C @? @? @ NWd

& F@C@ F@ DC A?@C AA<' =' I A1 @] F=?>@ GF F' F@ G= ?E @E 1AC 1AC> ?> =?E' @C ?> <?AG ?> , A' =' I =?<@CH ?' ACE@C A >@ E A ? @E =?E DA?' C@ @ B ?> F@ E A ? ?EAC @E F@C@ I ?A ?' F AG?' ?= J @ ;' =?E' FA >F' F@C@ G= F@ ?EAC @J @? a =?A F@C ?= J @ DA?' F@ I I@ E@ F= GF F' F@ DC A?@C ?EAC @E @ F@C@ G= ?A' ?EAC @J @? DA?' A1 F@ ?= J @ AC 1CJ A1 F@ EC=G@C GFA G@C@ = A' F@ D= @@ ;' G= AIZ@ @E' F= F@C@ G= ?A F ?> DA?' F@ I D CDAC ?>' A' I@ =?' ?EAC @J @? A1 F@ EC=G@C A E' ?A = =' =' I A1 @] F=?>@ ?AC G= =D=I @ A1 E@1C= E ?>' F@ D@C A? GFA @ ?=J @ ! G@C@ 1AC>@E 723 & AAE AB@CC @E' F@ AIZ@ A?;' =?E DA?' F@ DA ? I@ ?>' =1 @CG=CE I J @E' A' F@ A? E@C= A?' A1 F@'Z E>@ F@ G@C@ A1 AD ? A?' F= F@ A?B A?' G= C >F 1D!3

DA?' =?' ?E J @? 1AC 1AC> ?>' F@ 1A AG ?>' ? C J @? GF F' G= E@ C I@E' = =' I A1 @] F=?>@

? F C@ # C =?< ?>' AJD=?

G@? A?@' E= =1 @C E= @' D= NG FA = @D =? @d A' F@ ACE@C A1 * C = J @ @?E@C A? . N

U ? AC B= @' C@ @ B@E

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FCA> J AC A? C@@ A?EA? H

NAH 9 1+=/ (/&/((/ :' 42 =' * '19 1+=/ .' /+19 AIM G +=4 ' ' 1 .N ' =' HD ' "' NHE

W b /V ' L 4a) /(+*: ' ' 61+/9 -' GM ' G +=4 ' ' 1 .N ' =' IA ' "' NAH

"3 ; 2 ') =4 249/(1+=/=' 2&&+4 1+=/ #62(& "' YYE ' +' : * +** ' . "' YYE' 7 /(/ 1 4/ :

W /V ' L 10=' ' +' : ' ' ' . IO +#*/# ' 7+ '24 +4 49 ; //4 ') 2 49 /' 6<:) /=' 9<4 9 492<) 94 49 /' 12 'P J 14 2 '' 7(2) ' 2 '' 49 /') (2<' :' 49+4 &2(7+ ' 2 +' : 2(=/ ; / ' 4 49 /' 3 ** 7+ '24 ' /)24 +3*/ ' +' : 49/(/&2(/ &) / ' < ' / '

L2() /(# ; +# 3 12 ; ; 44 / : 2 +' 7 ** 492 &)9 4 3 =) ' / : '' 49 7(2) 9(=P 4 + '' ' + ; 2 49 "/(=2 '' 792=/ 7 ** 4 "<("2(4 42 3/

L2() / : 3 ** 2 /V19+ ') / 492<)9 '2 'P :2(=/ ; / ' 4 2 49 /' ' + ; / 2 49 /' : (+7 /(=

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8 ‘^ 3 5 Q 8 ‘ ‘W : 3.‘b ‘ $% &‘

‘G= ‘A >@ @E‘ F= ‘ F@‘ ? C J @? ‘G= ‘?A ‘=‘ I ‘A1‘@] F=?>@‘;‘ A‘ A? @‘=‘ I ‘A1‘@] F=?>@‘ F@C@‘ J ‘ I@‘=‘ D@C A?‘ EC=G ?>%‘=‘ D@C A?‘A?‘GFAJ‘ ‘ ‘EC=G?‘=?E‘ GFA‘ ‘ A‘= @D %‘=?E‘=‘ D@C A?‘ A‘GFA?‘D= J@?‘ ‘ A‘I@‘ J=E@%‘=?E‘ F@C@‘ F@‘EC= B@C‘@]DC@ ‘ DCAF I @E‘= @D=? @‘ 5= @ A?%‘ %‘7 F ‘ ? C J@?‘ @C=? ‘ E 11@C‘ 1CAJ‘= ‘A F@C‘ F= ‘ ‘F=B@‘ @@?‘=‘ I ‘A1‘@] F=?>@%‘ I ‘ C@= A?‘A1‘ F@‘ GACE‘ [‘G FA ‘= @D=? @n‘ ‘EA‘?A%‘ FAG@B@C%‘ A? E@C‘ F=‘ F@‘ ? @C A?‘A1‘ FA @‘GACE‘=@C ‘‘ F@‘ F=C= @C‘A1‘ F@‘ ? C J@?%‘ A‘=‘ A‘DC@B@?‘ ‘I@?>‘=‘ I ‘A1‘@] F=?>@‘ ‘ F=‘ ‘?@ @ =C‘ A‘ A? @‘=‘ I ‘‘%‘ F=‘ F@‘D=C ‘J=<?>‘F@‘ ? C J@?‘ FA E%%‘E C@ ‘ ‘A‘ AJ@‘A F@C‘D=C %‘C@b C?>‘F=‘ A F@C‘D=C ‘A‘D=‘ F@‘JA?@‘F@C@?‘J@? A?@E‘A‘ AJ@‘F CE‘ D@C A?‘AC‘F ‘ ACE@C%‘AC‘ A‘F@‘ ACE@C‘A1‘ Fu‘D=C ‘A‘J=<?>‘ F@‘ ? C J@?‘ F@‘EC=G@C‘J=‘ ?‘@=F‘ =@‘DC@ C I@‘F@‘ @CJ ‘DA?‘GF F‘F@‘D= J@?‘ ‘A‘I@‘J=E@‘ @C@‘F‘‘F=‘ FA @?‘A‘DC@ C I@‘F=‘F@‘EC=G@@‘ ‘A‘J=<@‘F@‘D= J@?‘ n‘G FA ‘= @D=? @‘ F@‘J@=? ?>‘A1‘G F‘ ‘=<@‘A‘I@‘F=‘ F@‘FA E@C‘ ‘?A‘A‘I@‘D ‘A‘F@‘CA I@‘A1‘DC@ @? ?>‘ ‘A‘F@‘ EC=G!@@‘ I@1AC@‘ ‘I@ AJ@‘E @‘;‘ I ‘ ‘1‘<‘ FA E‘ FAA @‘ A‘DC@ @?‘ %‘ F@C@‘ ‘?A F ?>‘A‘DC@B@?‘F@‘EC=G@@‘1CAJ‘= @D T ?>‘ ‘;‘= =‘= @D=? @%‘A1‘ A C @%‘ ‘?A‘?@ @ =C‘A‘J=<@‘F@‘ ? C J@?‘=‘ I ‘A1‘@] F=?>@‘ ‘=C@‘E= ‘?A @E‘=?E‘ DCAT @ @E‘=‘ I ‘1AC‘?A?= @D=? @‘;‘ F@ ‘J %‘ F@C@1AC@%‘ I@‘ I ‘ I@1AC@‘= @D=? @‘ ‘=‘ >F‘=C@‘?A%‘ ?‘1= %‘ AJ JA? ‘= @D @E‘ ‘ F?<%‘ F@C@1AC@%‘ F=‘ F@‘ ? C J@?‘ ‘ DCAD@C ‘ E@ C I@E‘=‘=‘I ‘A1‘@] F=?>@n‘1!3

; == 2‘‘2&‘ 49/‘ ‘+ ; /‘2&‘ 49/‘ ‘‘+#//

& F@C@‘F@‘DC A?@C‘EC@G‘=‘I ‘ DA?‘F@‘C@= C@C‘A1‘F@‘?=B %‘ D= =I @‘A‘I =?<‘AC‘ACE@C%‘=?E‘ >?@E‘ ‘?‘F@‘?=J@‘A1‘=‘?=B ‘ C>@A?%‘ ‘G=‘FA E@?%‘F=‘A‘A? @‘=?‘ACE@C‘1AC‘D= J@?‘A1‘ JA?@ %‘F@C@‘J ‘I@‘AJ@‘D= @@‘;‘=?E‘F=‘=‘E C@ A?‘A‘D=‘A‘ I =?<‘AC‘ACE@C‘G=‘?A‘ 1 @? ‘‘"*‘3‘ A‘31F@C@‘F@‘DC A?@C‘G=‘ ?E @E‘1AC‘1AC> ?>‘=?E‘ @C ?>‘=‘?=B ‘D= ‘I %‘GF F‘G=‘J=E@‘ D= =I @‘A‘I =?<‘AC‘ACE@C%‘ ‘G=‘FA E@?‘F=‘F@C@‘J ‘I@‘AJ@‘ D= @@%‘=?E‘F@‘ A?B A?‘GJ‘F@ E‘ 1BCA?>‘1; 3

; == 2‘‘2&‘ 49/‘ ‘+ ; /‘2&‘ 49/‘ :(+7//

‘F=‘I@@?‘FA E@?‘F=‘=?‘ ? C J@?‘ ?‘ F@‘1AC J‘A1‘=‘ I ‘A1‘@] F=?>@‘G F‘=?‘= @D=? @‘A?‘ ‘ ‘=‘I ‘A1‘@] F=?>@%‘= FA >F‘ F@C@‘I@‘?A‘D@C A?‘?=J@E‘=‘EC=G@@‘ ?‘F@‘I ‘ F@‘?E J@?‘ F=C>@E‘F=‘F@‘DC A?@C‘F=B ?>‘?‘F ‘DA @ A?‘=‘I ‘A1‘@] F=?>@‘ =‘1A AG ‘$`

9S

‘ 7 CJ ?>F=J%‘ F‘ > %‘ 9 .

7 &A‘JA? F‘=1 @C‘E= @‘D= ‘A‘J ‘ACE@C‘F@‘ J‘A1‘G@? ‘ DA ?E ‘1AC‘B= @‘C@ @B@E‘ ‘ ‘

G‘ : ‘7 :&

7 @?@C=‘5CAB A?‘&=C@FA @%‘ =<@C%‘, %

?@ C@@ %‘&@ C@@ %‘ A < @ %H

72<*:‘ ‘24‘ 9+J/‘ //‘‘ 2&‘J+*</‘ 42‘ 49/‘ 4+0/(‘2&‘4‘ ‘:‘=//‘ /V‘&‘ +(47( )94‘ ‘ ‘ ‘.MY‘ 79/(/‘+‘‘ ‘: 14 ; /‘4‘7+=‘ 9/*:‘3+:‘2‘‘49/‘ 2<‘:‘49+4‘49/‘ ‘=4(<P ; /‘4‘) J/X‘ ‘‘/J :/‘1/‘7+=‘‘24‘+=‘=4+4/:‘ +‘‘2(:/(‘&2(‘ ; 2‘/#‘?+‘:‘+‘T</=4 2‘‘ 3#‘ /‘ *+‘1‘ ‘49/(/‘ ; /‘4 2‘/:‘ ‘‘49/‘‘24/

WYb‘ 79/49/(‘49 =‘ "+"/(‘492<)9‘‘24‘ :(/14/:‘42‘+‘#‘ "/(=2‘‘ +=‘+‘:(+7/(‘ ;)94‘‘24‘<‘:/(‘49/‘1(1<; =4+‘1/=‘9+J/‘ 3//‘‘4(/+4/:‘+=‘+‘3 **‘2(:/("B‘ /) ‘ ‘ ‘‘/+(‘G‘ ‘ ‘ 23‘..D‘ "7B‘ /V‘, ‘ 19+(:=‘ ‘ ‘ ‘.NH W[b‘ /V‘ ‘ +‘:+**‘ ‘ ‘ ‘.NA

=EEC@ @E' A' F@'D@C A?'GFA'C@ E@ '= ' F= 'D = @'AC'FA @',' F@C@T
1AC@' ?' F= ' = @' F@' I 'G= 'A?' F@'1= @'A1' 'E C@ @E' A' AJ@'A?@%
=?E' F@' A C 'F@ E% F= '= ' F@'E@1@?E=? 'DCAJ @E' A'D= ' % F= !'
G= ' A? B@' @B E@? @' F= ' F@' G= ' F@' D=C ' A' GFAJ' 'G= '
=EEC@ @E;' =?E' 5=C<@% % = E' F= ' F@' 1= ' A1' F@' E@1@?E=? H'
= @D =? @' G= ' A? B@' @B E@? @' F= ' F@' B@E' = ' F= 'FA @%
=?E' A? @b @? ' F@'EC=G@C'G= ' ?E @E' A' AA<' ?A'1 C F@C% 1"3

''2(:/(' 49/' F@' DC A?@C' G= ' ?E @E'!1AC' 1AC> ?>' =' G=CC=? ' 1AC' F@'D= T
) '+4< /=42' J@? ' A1' JA?@ % GF F' D CDAC@E' A' I@' =' F@b @' A?' *@ C '
79 19' 7/(/' D=CCAG% I=?<@C % EC=G?' ?' F@' ?=J@' A1' F@' @]' 5CAB E@?'
&2()/:' 9<4 ' A @ % =?E' >?@E' I ' F@' F=CJ=?' =?E' FC@@' J@JI@C ' A1' F@'
79 19' 7+= # ?JAG' I AJJ @@' A1' F@' A @ ' F@' @]' 5CAB E@?'
12<'4/(=)'/:' A @ 'F=E'B=C A ' IC=? F@ ' ?'E 11@C@?'D=C ' 1' F@' A ? %=?E'
9#49/' "(2"/(A?@' = ' # ?JAG' ' F@' C= @ 'A1' F@' A @ '= ' F@b @'EC=G?'
"/(=2'' +' :' A?' F@' I=?<@C ' A1' F@' A @ ` *@ C ' D=CCAG ` A?' = A 11' A1'
7 492<4 792=4 F@' A @ %G@C@' A' I@' >?@E' I ' F@' F=CJ=?'=?E' FC@@' J@JI@C '
=)'+4<(4 4' A1'=' I AJJ @@'N F=' % =' AJJ @@' A1' AJ@' IC=? F' A1' F@'
72<*:' '24' A @ d%=?E' G@C@' F@?' A' I@' A ?@C >?@E' I ' = @?GF @% F@'
9+J/'3//'' @C<' A1' F@' A @ ' F@'DC A?@C' ICA >F ' F@' F@b @'= @>@E' A'
"+ : I@' 1AC>@E% I@=C ?>' 1A C' >?= C@ % GF F' D CDAC@E' A' I@' FA @'
A1' F@' F=CJ=?'=?E' FC@@' J@JI@C 'A1' F@'# ?JAG' I AJJ @@%'
A' = @?GF @%=?E' F@% DDA ?>' F@' >?= C@ ' A' I@'>@? ?@%'
A ?@C >?@E' F@' F@b @' ?' F@' = ' J=??@C ' F@'1A C' >?=T
C@ ' G@C@' 1AC>@C @ ' F@' = F@C' A1' * @ C ' D=CCAG' <?@G'
?A F ?>' A1' F@'1A C' >?= C@ % AC' A1' F@'D@C A? ' GFA @' >?= C@ '
F@ 'D CDAC@E' A' I@%=?E' I@' = E' F= ' F@' I=?<@C 'E E' ?A '<?AG'
GFA' F@' J@JI@C ' A1' F@' I AJJ @@' G@C@% I 'C@ @E' A?' F@'
>?= C@' A1' = @?GF @' = ' = F@? = ?>' F@' F@b @' ' @'
=EE@E' F= ' =' F@b @' >?@E' I ' F@'Z?@JI@C 'YA1' F@' AJJ @@%'
I ' ?A ' A ? @C >?@E' I ' F@' @C<%% GA E' ?A '%I@' D= E' 'G= '
AIZ@ @E' F= ' F@C@' G= ' ?A' AJD @ @' ? C J@?'1AC>@E' & FT
A ' F@' ?=J@'A1' = @?GF @' F@' ? C J@? !G= ' ?A ' AJD @ @'
' G= ' =? G@C@E% F= ' ' G= ' =' AJD @ @' ACE@C' G FA ' = @?'
GF @H' >?= C@% GF F' G= ' ?A' D<C ' A1' F@' ? C J@? % F '
J@C@ '=' > =C=? @@' F= ' F@' A F@C' >?= C@ 'G@C@'>@? ?@;' =?E'
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?' F@' AIZ@ A?% N d

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;/'4 9/*:' EA J@?% E@ C I@E' = ' =' G=CC=?' 1AC' F@' D= J@?' A1'R?A?@ ' ?'
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c. 7 @ C@ =C H

'f"/''#

7 F@' F=C@FA E@CH' ?=J@' J I@' @?EAC @E' = F@' I= <' A1' F@'
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F@' DC A?@C' G= ?' F@' @JD A J@?' A1' F@' = E' C= G= AJD=? '
=?E' G= F@' E A1' F J' =?E' =' 1@ AG @C<' A' 1 D' F@'
E B E@?E' G=CC=? D= =I @' A' F@' DCADC @ AC =?E' A' D = @' F@'
=JD 'A?' F@ J =?E' D F@' ? = 'A1' F@' AJD=? 'A?' F@' =JD'
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F@ J ' =?E' G= ' =1 @CG=CE ' E ' >?@E' I ' F@' @ C@ = ' F@'
?EAC @J@? ' A1' ' ' ? 11@' @C' G= ' =1 @CG=CE ' 1AC>@E' =?E'
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' F@' I=?<@C 'GA E' ?A ' F=B@' D= E' F@' JA?@ 'J@? A?@E' ?'
F@' ACE@C' @B@?' A' F@' DCAD3 @ AC' F J @ 1' G FA ' 1 ' ?EAC @T
J@? ';' =?E' DA?' =' @= @' C@ @CB@E' ' G= ' F@ E' F= ' = ' F@C@'
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?' F@' EA J@? 'G FA ' F@' ?EAC @J@? ' A1' F@' DCADC @ AC' F= '
f ?EAC @J@? 'J >F ' I@' A? E@C@E' = '?@ @ =C ' A' J=<@' F@' ? C T
J@? ' =' D@C1@ ' ACE@C' AC' G=CC=? ' = FAC K ?>' AC' C@b C ?>' F@'
D= J@? ' & F@ F@C' F@' EA J@?' I@' C@>=CE@E' = ' F@' G=CC=? ' AC'
ACE@C' A1' F@' AJD=? ' DA?' F@ C' I=?<@C ' AC' = ' F@' G=CC=? '
AC' ACE@C' A1' F@' DCADC @ AC' A' F@' I=?<@C ' A' D= ' A ' A1' F@'
AJD=? H'1 ?E 'NJ=E@' IZ@ ' A'F 'ACE@C' A' F@'=JA ?' D@ 1@E'
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G FA ' F' ?EAC @J@? ' ?E' F@C@1AC@' F@' 1A I> ?>' A1' F@'
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F@' DC A?@C' G= ?E @E' 1AC' 1AC> ?>' =?E' @C ?>' =?' ACE@C' =?E' & @C@='
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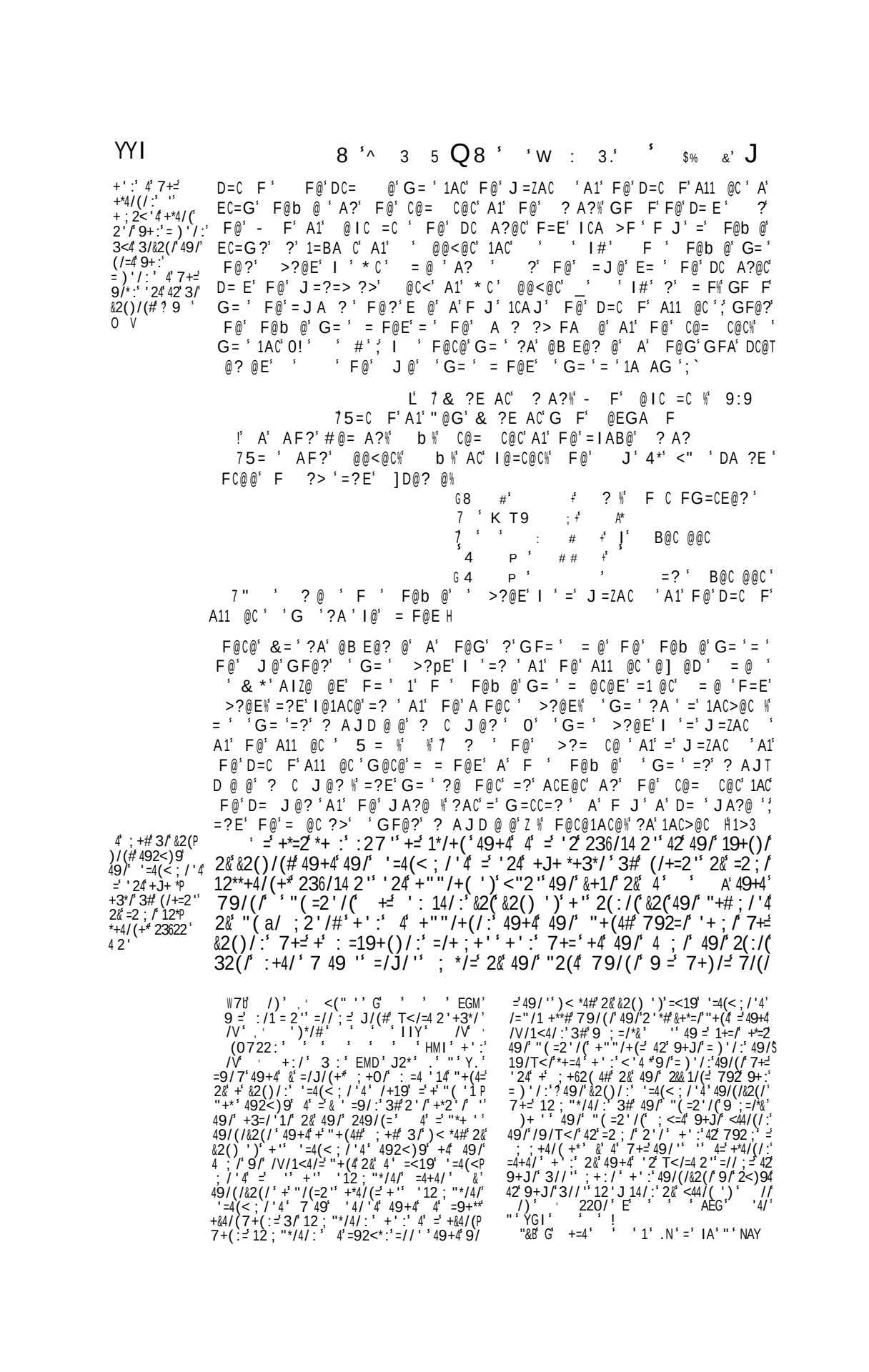
AB@C @@C 'A1' "@G' & ?E AC;' F@' DC A?@C' G= ' = =?' AB@C @@C';Y A1
=?E' F@C@' G@C@' FC@@' F C FG=CE@? ' =?E' 1A C' AB@C @@C ' ?' F@' 1B@D@C A?



D= =I @' % ?E@C' F' C J =? @ ' F ' >@? ?@' ACE@C' GA E' ?A '
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? @ ' J =E@' ?' F@' J =??@C' F@C@ ?' DC@ C I@E; F@' A11@? @' G= '
FA 'E@?' A' I@' 1AC>@C % F@' ACE@C' @ 1' D CDAC ?>% A?' F@' 1= @' A1' %
A' I@' J =E@' = ' =?A F@C' D = @' I@ A?E' F@' J @E' E =? @%!53
F@' ?E J @? '=>= ? ' F@' DC A?@C' G= ' 1AC' 1AC> ?>'=?E' @C ?>' 1' F@ ? C '
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?' =' @= @' GF@C@' =' I ' A1' @] F=?>@' G= ' E C@ @E' A' 7 AF?' -! 2 P =?E' F@' = @D =? @' G= ' I ' 7 AF?' d! 2 'G' P =!?E' F@' ?E J @?' = @E' F= ' F@' I ' D CDAC @E' A' I@' E C@ @E' A' AF?' d! 2' I ' F@' ?= J @' A1' AF?' -!& 2 ' =?E' F= ' F@%DC A?@C' 1AC>@E' F@' = @D =? @' ?' F@' ?= J @' A1' AF?' G>C;' Z E> J @? ' G= %' =CC@ @E%' I@ = @' -! 2' A E' ?A ' D CDAC ' A' I@' d! 2 ' 1:3

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?E' ?' F ' 1AC J' ' G= ' @C@E' I ' F@' DC A?@C%' = ' =' ?A @' 1AC' 1AC ' DA ?E %' =?E' F@' DCA @ AC' >=B@' F J ' 1AC ' DA ?E ' ?' F=?>@' 1AC' ' I Z@ A?' G= ' =<@?' A?' I@F= 1' A1' F@' DC A?@C%' F= ' F ' ?A @' = ' @C@E' I ' F J ' G!= ' ? A J D @ @;' =?E' G= ' ?A %' ?AC' E E' ' D CDAC ' A' I@%' =' DCAJ AC ' ?A @%' 1AC' G=?' A1' F@' >?= C@' ;' =?E' F= %' F@C@

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"' EEH' +' :' =' IA' "' NAG' "2'' 49 =' R] /+ : ')$' 1+=/' G' /+19' ANM' G 1+=/' +'=& /*:' ' ' ''49/' 1+=/' 2&' / ' +=4' ' '1' .N' =' IA' "' NAG' +' :' =' AY' ' 2** 1244' I' +<'4' HMH' 23=/(J/: ' T1C

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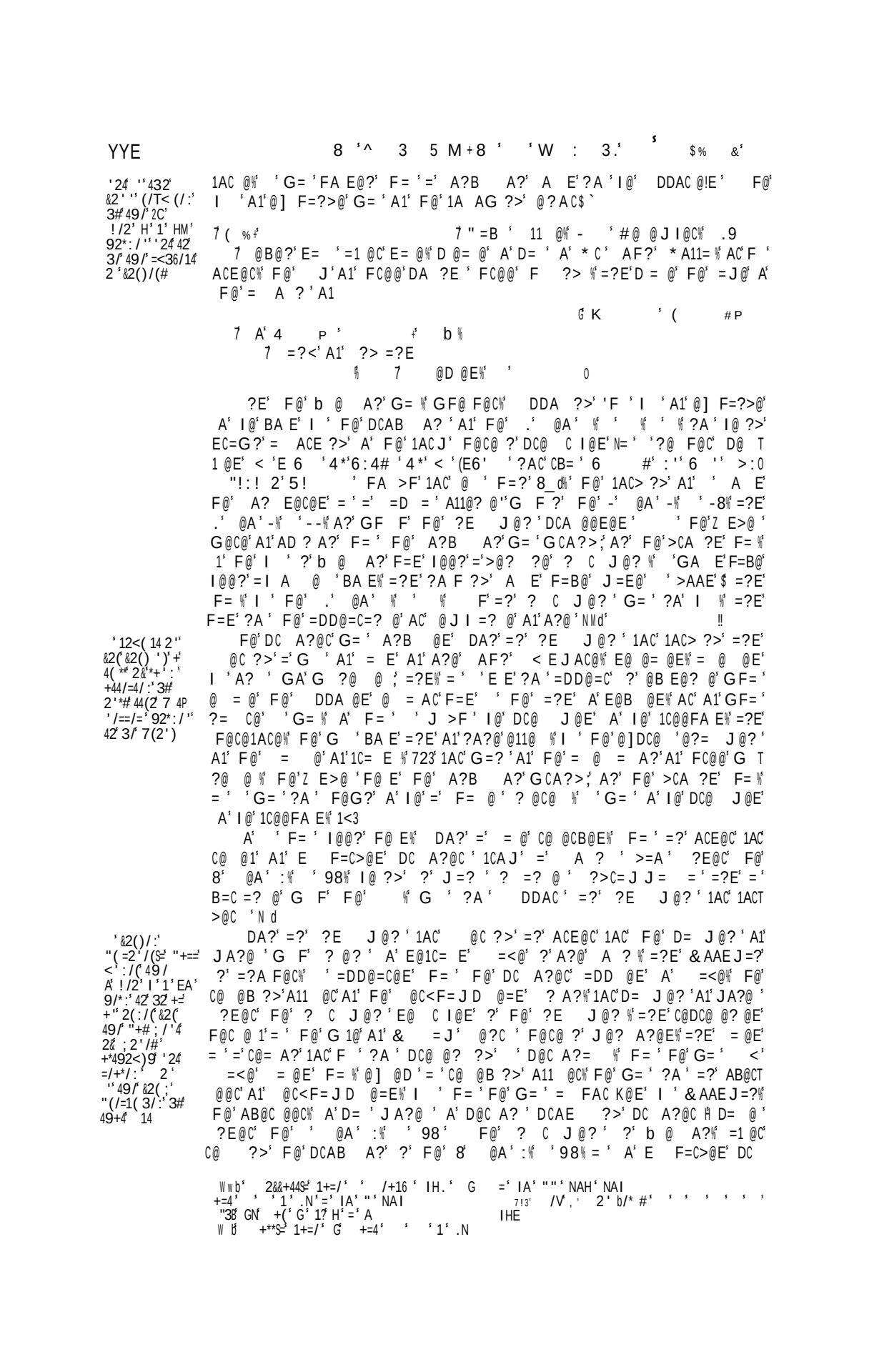

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A1' F@ C' @ @ J @? %' DCA @@E@E%' 7 ?E' GF@C@= ' & = J ' @?C %' F '
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A1' F@' E F=C>@E' DC A?@C H F@' @= ' A' ' G@C@' J = ' D @ @ ' A1'
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= @%' @ ' - %' C@b C@E' ' A' I @' @= @E' G F' F@' A ? ' @= %' AC'
G F' =' @= ' A' I @' D@ = ' DCAB E@E' 1AC' F= ' D CDA @ ` ?' F ' = @'
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?' G F= ' D= H ' A1' F@' ? @E' 6 ?>EA J ' =?EG F' %' =?E' F@' = @'
A? ' C@ = @ ' A' DC A? H ?' ?> =?E' =?E' & = @ ' ' F@C@' ' ='
DCAB A' ?' F@' D= %' 7 F = ' F@' E F=C>@E' DC A?@C' DCAE @ ' F@'
= E' CA @' F J @ 1 H F@' DC@ @? J @? ' F@C@' G= ' I ' F@' GA J =?%'
=?E' F@C@1AC@' BA E ' : ' F@' = @' = ' F= ' F@' AB@C @@C' F= '
D= ' F@' E F=C>@E' DC A?@C%' =?E' =<@' =' C@ @ D ' 1CA J ' F' DC A?@C '
F %' F@C@1AC@%' G= ' @=C ' =' A?E A?= ' ACE@C ' 8' F ' ' ?A ' =?'
ACE@C' 1AC' F@' D= J @? ' A1' J A?@ ' F@' = @' D@=< ' A1' ' = '
FCA >F' = ' =' D= ' & F@?' =' = @' E@ >?= @ ' =?' ? C J @? ' I 4'
=' D=C =C' ?= J @%' ' J ' I @' E@ C I @E' I ' F= ' ?= J @' $ =?E' ' '
?A ' C @%' I @ = @' =' EA J @? ' A? = ? ' A?@' @' ?>C@E @? ' A1' ='
D=C =C' ?= C@%' F= ' F@C@1AC@' F@' ? C J @? ' @ 1' FA E' I @' A'
E@ >?= @E ' = %' 1' =<@' F=E' I @@?' =' @CB=? ' A1' & AAE J =?H%'
=?' @C ?>' A' F J ' J >F ' F=B@' I @@?' E@@ J @E' =?' @C ?>' A' F '
J = @C%' I ' F@' FA E ' =' E ? ' A11 @' ?E@C' F@' A=CE' A1' =CE =? '
' F@' Z E>@ ' G@C@' ?=? J A ' A1' AD ? A?' F= ' F@' A?B A?'
G= ' 7>F ' 1D3
?' - ' 3' 4> ' -' ' ,' 6 ' :%' C@ G@ %' %' = E%' 7 ' F=B@' ?A '
1A ?E' =? ' = b%' ?' GF F' =?' ?E J @? ' 1AC' @C ?>' =' 1AC>@E' ? C

YDM : 4' ' % .' ' 4'N ' $% &'

J @? '= ' AJ JA?' =G' F= ' I@@?' J = ? = ?@E%' ? @ ' AJ@' 1C= E' G= ' = = ' D@CD@ C= @E' I ' %' GF F' '?A ' F@' F=C>@' ?' F ' ?E T J @? ' =?E' 5= @ A?%' %' '?A '=G=C@' A1' =? ' = @' A?' F@' IZ@ ' F= ' F@' 1AC>@C ' A1' F ' ? C J @? ' G= ' =' 1AC>@C ' = ' AJ JA?' =G' F@C@' '?A' EA I %' I ' J ' AD ? A?' ' F= ' F@' F=C>@' A1' @C ?>' =??A ' I@' = ?@E%' =?E' F@'Z E> J @? ' J ' I@' =CC@ @E H

<44/(')' +' :21< ; /'4 79 19' =' &2()/:' =' +'' 2&/'1/' &' 49/' :21< ; /'4 3/' +' &2()/(# +4 12 ' ; 2'' *+7

' F ' = @' F= ' I@@?' ? @' AB@CC @E' F@' DC A?@C' G= ' ?E @E%1AC' =' 1AC>@C ' = ' AJ J A?' =G' A1'=' A? @? ' AF (' AE@?' A' = ' = ' ?@] ' 1C @?E' A' @C = ?' ?1=? ' ?' =' F=? @C ' ;' =?E' =' @ A?E' A ?' F=C>@E' F J ' G F' @C ?>' F@' 1AC>@E' A? @? %' GF F' G= ' = ' 1A AG ' $` !7

7 ?' F=? @C

7 * @ ' =>= ? ' * @

7 ' F@C@I ' A? @? ' A' I@' ?@] ' 1C @?E' A' F@' ?1=? %' 1AC' F@' D CT DA @ ' A1' F '

G ' (#0

' G= ' A? @?E@E%' A?' F@' = FAC ' A1' F@' DC@ @E ?>' = @%' F= ' F@' @ A?E' A ?' F=C>@E' ?A' A11@? @;' I ' C @%' %' @1 ' F@' = @' A! F@' Z C %' GFA' 1A ?E' F@' DC A?@C' > ' A?' IA F' A ? ;' =?E%' A?' =' = @' C@ @CB@E%' F@' A?B A?' &=' F@ E' C >F ' A?' F@' 1 C ' A ? %' I ' ?A' AD ? A?' @] DC@ @E' A?' F@' @ A?E ' N ,d ?E' GF@C@' F@' DC A?@C' G= ' A?B @E' A1' @C ?>' =' @C 1 = @' 1CA J ' =' @C> J =?' F= ' F@' DC A?@C' F=E' A?E @E' =' FAA ' G F' = I ' =?E' @ %' =?E' !I A F' F@' DC@ @E ?>' = @ ' G@C@' @E%' F@' A C '@] DC@ ' AB@CC @E' =62 ' ' 4 , ; ' =?E' F@ E' F= ' ' ' =' AJ JA?' =G' A11@? @' A' @C' =' 1AC>@E' ? C J @? %' F@' 1AC>@C ' A1' GF F' ' =?' A11@? @' = ' AJ JA?' =G ' N d

' & ((&

H*' < ' "! ' ">& ' ! ' " E ' 4 *' 5 <! <' W4"2 "' ' &6 ' ' < J4&&! #

1 F@' GC @?' '=4(< ; / '4=' '' ()=" /14 2& 79 19' &2()/(# ; +# 3/' 12 ; P ; 44/ :

& @' J = ' ?AG' DCA @@E' A' A? E@C' F@' GC @?' ? C J @? ' ?' C D@ ' A1' GF F' 1AC>@C ' J = ' I@' AJ J @E ' AJ JA?' =G% F@' A ? @C1@ ?>' A1' =' J = @C' A1' C@ ACE' ' 1AC>@C ;' 1AC% ? @' F@' =G' > B@ ' F@' F >F@ ' C@E ' A' = ' C@ ACE %' ' =??A ' C ' I@' A1' F@' J A ' ' A? @b @? @' A' F@' D I ' A' F=B@ F@ J ' @ F@C' 1AC>@E' AC' 1= 1 @E%' NJ d' A%' ' ' =>C@@E' A' I@' 1AC>@C ' A' A ? @C1@ ' =? ' = F@? ' J = @C' A1' =' D I ' ?= C@ ;' = ' =' DC B ' @= %' 1 3' AC' =' @? @' 1CA J ' F@' I=CA? ' A1' F@' @] F@b @C' A' AJDA ?E' =' E@I %' NAd' AC' =' @C 1 = @' A1' FA ' ACE@C %' 1E3' AC' =' DCA @ A?' 1CA J ' =' D=C = J @? ' J =?' N>!d ' ' = A' ?b @ A?=I @' F= ' =' J =?' J = ' I@% ?' <@' J =??@C%' > ' A1' =' 1AC>@C ' = ' AJ J A?' =G%' I ' 1AC' ?>' =

" B' 2) ' ' ; #49 /=' .' /' ' M' ' INE' #<LLC2.. ' #M
G' ;' ' EDN " B' .' 2**' 3' YA' DY' /*J' .IY'
"C% /) ' ' 9+(; +' ' /+(=' ' ' GEA' (2' *a' .DE' E' 2: ' ((
! .' "' YDY' '' /) ' &' 49/(=' I' 2V' " B' .' 2**' 3' YE' " ' AA' ' +(
' ' ' .D' 49/' "(=2 ' /(' 7+=' 19+() / :' 7 49' HGY' .' 2 ' /=' HGA
<44/(')' +' &2()/:' 7+((+' 4# 2&' +' 92(/' +' :' " B' .' 2**' 3' YA' " ' A' G' < =' .HD'
2 &/' ' =// ; /:' < ' 7 ** ')' 42' +14' 2 :' 2 B' .' /J' .HE
/) ' . ' 2<*4' 3<4' 49/' 1+=/' &+ */:' 29' 49/ " B' .' : ' .IG

E@@EX 1"3 =?E F@C@1AC@ @@J F= A?@ J= I@ @b = > I 1AC> ?> =YG GF F =??A I@ FA >F A F@ A1 @ A? @b @? @ F=?= E@@E N d F@C@ @@J A I@ AJ@ CA?> AD ? A? ? F@ FAA< F= F@ A ? @C1@ ?> A1 =? GC ?> A1 =? ?1@C AC ?= C@ A FA @ =IAB@ J@? A?@E ?A 1AC>@C = F@ AJ JA? =G N d ?E F= I@@?F@ E F= F@ 1AC> ?> F1 =?A F@CH F=?E =?E F@C@I C@ @ B ?> C@? E @ A F J 1CAJ F @?=? ? A D ? F=I @ = = 1>3 =G< ? C@J=C< F= =??A C@ I@ DCAB@E I =? >AAE = FAC @ F= F I= @ C J@ =C@ GFA E C@>=CE@E I F@ AJ JA? =G = ?A N1@ @CB ?> =D I DCA @ A? =?E F= F@ AD ? A? A1 F@ C I@ ?> D ? F=I @ I ?A =G @@J ?A A I@ J= ? = ?=I @ ? @ J=? A1 F@J =C@ JA @C = ? D ? F=I @ I 1AC @ A1 F@ @? 9 ;=?E F= =??A I@ =A?B ? ?> =C> J@? F= F@ =C@ ?A D ? F=I @ I F@ AJ JA? =G I@T = @ F@ =C@ A1 =DC B= @ ?= C@ = J F= A F@C GC ?> A?T @C? ?> A F@C J = @C ?D A?@ I@ ?> C@=E A =11 CJ F= F@ J =< ?> A1 =1= @ E@@E A? @C? ?> =DC B= @ J = @C ?A D ? F=I @ = AJ JA? =G @ 1 C F@C = F= D@CF=D J= I@ C@= A?=I @ A J =<@ F E ? A? I@ G@@?F@ A ? @C1@ ?> A1 F G1 > F@ 1AC>@C GF@C@A1 = ?F@ =IAB@ @= @ DCAD@C D ? F=I @ = 1AC>@C =?E F@ A ? @C1@ ?> A1 A F@C GC ?> A1 =?F ?1@C AC ?= C@ F= F@ 1AC J @C ?F@ @ 1 C J ?= GF@ F@C =? F CE D@C A?F I@ = = ?Z C@E F@C@I AC ?A I F = @C ?A C J@ ? @ AJ@ A?@ C@ @ B@ =DC@Z E @ 1CAJ 1 3 AI @CB@E = ?A J = @C A1 CDC @ A 1 ?E A =I @ = GC @C = =G< ? C@=E ?> F A J F = A?F ?= D= F ?AG ?E@@E AA G@ I@= @? I GF F DC@B A A F@ J@ A1 F@ C@BA A? GF@?F D=D@C @ C @ I@ =J@ J F FAC@ AJ JA? F=E I@@?F I @]D AC@E NJd ? G F C@ D@ A F@ 1AC@>A ?> E ? A? GF F F@ =<@ I@ G@@?F@ A ? @C1@ ?> A1 q F GC ?> F@ 1AC>@C GF@C@A1 DCAD@C D ? F=I @ = 1AC>@C =?E F@ A ?T @C1@ ?> A1 A F@C GC ?> A1 =?F ?1@C AC ?= C@ E F= FAG@B@C D = I @ F ?]= I@ I ?A J@=? = A A?F A1 F@ E 11 I = J@C@ A?Z@ C@ GF F @=B@ F@ C J@ A1 1AC>@C = ?E ? ?F DC ? D @ = I@1AC@ =?E F@?E A A A?1A ?E G F F@ >@?@C= = A1 F@= $ 1?3 =?E F= EA@ ?A =DD@=C DA? 1 A? E@C= A?F A1 F@ IAA< A GF F F@ C@1@C F= ? GF@C@ =EZ E>@E AC @B@?F >@?@C= = E EDG?F= F@ A ? @CT 1@ ?> A1 GC ?> A1 =? AC GF@C@I =? D@C A?F J= C@ @ B@ = DC@Z E @ 1 EA?@ > "! 6> 6 AC &6 4 6 !&4 ?A D ? F=I @ = 1AC>@C N Md A AI @CB@E F= FA @ IAA< GF F @@J = 1 C >F J A CA?> A G=CC=? F@ ?A A?F= GC ?> A1 =?4 ?1@C AC ?= C@ F = @ @C =C@ ?A F@ IZ@ A1 1AC>@C = AJ JA?F =G 1 1= C A? E@C@E =?E AJD=C@E =J A ? A ?A JAC@ F=?F ?= F= F@ JD = A?F A1 A ? @C1@ ?> @ @1 AC GC ?> *"! 4 4> 4"*4 &3 &4& 4"*"4&5< 4 # &62 4> # > 4"*4 *> " 6! !2 !*! 6 !4 ?A = A?=I @ =?E

"B . 2 3 YY + # ; E. 7 ID . : GDE H /2 .DM
"B 22(' DYM 2# .M. #' HMG
. +7O ' 1' DM = .M
"B C 2** IH. . : .Y .AA IA.
. 2** 3' YY '19' IM' NM' . /2'
.M. H /2' GH. (2 *a GNY EAH
H < = GYA

W]b (2 *a .YY /*J .IY H
< = GYA
WJd . +7O ' /' DM = . .
"&B G +=4 1' .N' = D' "' EAN
"OB G +=4 1' .N' = . "' EAN
' :+=42 49 : =4 '14 2 '3/47//"&2()/(#
+' :19/+4= =// S. "' A.E
"5B +=4 1' .N' ^' D' "' EYM

F= ' F' @ @C ' AC' GC ?> ' =C@' ? =D=I @' 1CA J ' F@ C' I =? @%
?A ' 1CA J ' F@ C' 1AC J % A1' DDAC ?>' =' F=C>@X A1' 1AC>@C % F@' F @1'
?>C@E @? ' A1' GF F' =C@' 1C= E' =?E' ? @? A?' A' E@ @ B@% 183

2<'4/(&/ 4 ')'
+'#7(4 ')'
7 49' +' &(+<:<p
*/'4 '4/'4
79/(/3#
+'249/(' ; +#
3/" "(/6<: 1/:'
=' &2()/(#+4
12 ; ; 2'' *+7

F@' DA ? ' A' GF F' F ' E A?' C@ = @ ' G@C@' 1 ' A? E@C@E'
?' F@' 1A AG ?>' J DAC =? ' = @% ?' GF F' ' G= ' FA E@?' F= ' F@'
A ? @C1@ ?>' A1' =' C@ @= @% AF = b =? @' 1AC' =' J' A1' JA?@ %
FA >F' G FA ' @= % G= ' 1AC>@C ;' =?E' F= ' ' GA E' F@' =' JA '
?Z C A ' ?A A?% =?E' @B@?' =' C@1 @ A?' A?' F@' AJ JA?' =G% A'
DDA @' ' A' E@1@ B@' = ' ?A ' A' DCAB E@' =' C@ J @E ' =>= ? 'A11@? @ '
A1' F ' ?= C@% 163 ?E' F ' = @!' ' A? E@C@E' = ' F=B ?>' ?AG'
@ @E' F@' C @;' F= ' < ' 4> "* ! ! 2' 4*' 6 ' ' 5 "! ! 2' 5! <' 6'
*"6>#!# '! ' 5< " : ' ' 6 4 < "' & 6 ' ' < 'E" C>#! # ' ! '*4"2&('
4B' 4&&4 ' 6 ' 1<3

L2()/(#2& +''
2(:/(' 42' 19+()/'
1/(4+ '')22:=
42' +112<'4' +':'
42' +""(2"(+4/'
"+(4 2& 49/'
"(21//:=' 42'
49/' :/&/':'
+'4S=' 27 '' <=/'
7 49' '4/'4 42'
:/&(+<:' -2
2' &(+<:' 7+=
/&&/14/:' ? 3<4'
4' 7+=' 92*:/''
49+4' 49 =' 7+=
&2()/(#

?' ?1AC J = A?' =>= ? ' F@' E@1@?E=? ' F=C>@E' F=' F@' I@ ?>'
IA ?E' A' E@ B@C' 8' A? ' =?E' =' b =C @C' A1' = J % A1' F@' B= @' A1'
_% A' F@' # <@' A1' < ?>F=J % =%' =' @C = ?' E= ' F@?' D= %'
A? C B ?>' =C E' ? @?E ?>' F@' = E' # <@' A1' F@' = E' = J' A' E@T
1C= E% =?E' G F' =' 1C= E @? ' ? @? ' A' =BA E' F@' E@ B@C ' A1' F@'
= E' = J ' A?% , ' DA?' F@' F= <' A1' =' @C = ?' @C 1 = @' ?' GC ?>%
>?@E' I ' A?@' ' 6 % 1= @ ' 1AC>@E' =?E' A ? @C1@ @E' =' @C = ?' U
GC ?>%' ?' F@' GACE ' =?E' 1 > C@ ' 1A AG ?>' $ `

g' A? ' ' 3' !' * C' AF?' & =CE ' ' EA' F@C@I ' ACE@C'
' 8' A ' A' F=C>@' F@' b =? ' A1' ' A?
F@E @' 8' 8' d =?E' ' b =C @C' 'A1' = J ' A' J ' = A ? %
!` D=C ' A1' F@' b =? ' F@C@' J @? A?@E' ?
.8' ' ' F ' @C 1 = @;' =?E' A ' A1' F@' JA?@ '
=C ?>' I ' F@' = b' A1' F@' = J ' ?' A C' F=?E ' D= ' A' * C ' & '
& =CE' =?E' A C @ 1' ' 1AC' @B@C ' A?' = ACE ?>' A' =>C@@ J @? ;'
=?E' 1AC' A C' A' EA ?>' F ' F= ' I@' A C' E F=C>@ ` <T
?>F=J ` DC ' F% . H ?E' ' F=C>@E' ?' =' @ A?E' A ? %
F= ' F@' D I F@E' F@' =J @' 1AC>@E' GC ?>%' <?AG ?>' ' A' F@'
1AC>@E% ,

F@' E@1@?E=? ' F=B ?>' I@@?' A?B @E% ' G= ' J AB@E% ?' =CC@ ' A1'
Z E>J @? % F= ' F@' ? C J @? ' @ ' 1AC F%G= ' ?A ' F@' IZ@ ' A1'
1AC>@C ' = ' A J JA?' =G% =?E' F@' A11@? @' G= ' ?A % F@C@1AC@% D ?T
F=I @' ?' F ' 1AC J % I ' = ' J A ' D ? F=I @' A? ' = ' =' F@= ;' I@ ?>'
J @C@ ' =' F ?>' A1' =' DC B= @' ?= C@% =?E' ?' @11@ ' ?A F ?>' JAC@
F=?' =' @ @C ' ?E' ' G= ' =C> @E' F= ' 1' F@' A ? @C1@ ?>' A1' =
' @ @C' F=E' I@@?' D ? F=I @' = ' =' 1AC>@C ' = ' A J JA?' =G% F@?' F@'
J =< ?>' A1' F@' ' @? '9% ' % A' D ? F' FA @' GFA' >A ' F@' JA?@ '
AC' >AAE ' A1' A F@C ' ?E@C' A A C' A1' 1= @' A<@? ' AC' A ? @C1@ '
@ @C ' G= ' ? >= 5C ' ' G= ' = A' C>@E' F= ' ' ?AGF@C@' =DT
D@=C@E' F= ' F@' # <@' A1' < ?>F=J ' F=E' I@@?' DC@Z E @E' I '
F ;' GF F' J >F ' F=B@' I@@?' ?E =I @' = ' =' F@= % 1' F@' F=E' I@@?'
A' DC@Z E @E;' W FA >F' ?A ' = ' 1AC' 1AC>@C ' = ' A J JA?' =G' '
= ' F@' A C ' F@ E' F= ' F ' G= ' ?E =I @' = ' =' 1AC>@C ' = ' A J JA?'
=G ' F= ' FA?@' A1' F@' I AA< ' A?1 ?@' F@' A11@? @' A' F@' D=C =C'
< ?E ' J @? A?@E' ?' ' ? ' ' ;' =?E' F= ' = ' 1AC> ?>' =' GC ?>' ?A '
@= @E' =J @' G F ?% = ' F@' J F @1' A1' 1AC> ?>' =' E@@E% F@' J =] J'
=DD @E% I ' 6# &' ' "6#!4' 6# &' ' ?' F= ' F ' G= ' C@T
A>? K@E' ?' F@' DC@=J I @' A1' F@' 8' K% ' :% GF F' C@ @ ' F=

W=B G' +=4' ' ' 1' .N' =' D' "' NYM' WAB G' +=4' ' ' 1' .N' =' D' "' EY. -
,R B +1' 3' ^ 3 5 W b

F@' 1uC> ?>' A1' (! &2 ' = ' G@ ' = ' A1'# # ' G= ' D ? F=I @' I ' =G' IC1AC@' F= ' = @' ; I ' F= ' A 1@?E@C ' F=E' I@@?' @? A C=>@E' I ' F@' AA' >C@= ' J E?@ ' A1' F@' D ? F J @? ' ; =?E' F= ' F@' 9' @?%' 9%' ' % E E' ?A ' C@= @' ?@G' A11@? @ % I ' A? ' @?F=? @E' F@' D@?= ' GF@C@' F@' 1C= E' G= ' @] @ @E% N d

?' F@ ' = > J @? ' DA?' F ' = @% F@' 1A AG ?>' ? =? @ ' A1' ?E J @? ' = ' AJ JA?' =G% 1AC' 1AC> ?>' ? C J @? ' ?A ' ?E@C' @= % G@C@' C@1@CC@E H A' I ' F@' A ? @ ' 1AC' F@' CAG?% =?E' C@ @E' DA?' I ' F@' A C ; =?' ?E J @? ' 1AC' 1AC> ?>' @ @C ' A1' C@E ' A' C= @' JA?@ % 7#3 1AC' 1AC> ?>' =' LI ' A1' @] F=?>@' AC' =' DCAJ AC ' ?A @% 1 3 =' I y A1' =E ?>% N Md' =?' = b =? @%% 'RMd' =' G=CC=? ' A1' %= AC?@ % 1<3 =' J =CC =>@' C@> @C% 1!3 =' DCA @I A?' 1CAJ ' =' J @ J I @C' A1' D=C =J @? % 1C3' G4 F @B@C=' A F@C' = @ % 7 3 Y ?E' F@' A11@? @' A1' 1AC>@CB' G=' E ?> F@E' 1CAJ ' F@= ' = ' AJ JA?' =G' =?E' DA?' F@' ' @? ' 9% ' % GF@C@' F@' D=C ' C@ @ B@E' =?' = = ' DC@Z E @% GF F' G=' A? E@C@E' ?A ' A' I@' ?@ @ =C ' A' A? @' 1AC>@C % ?' GF F' ' G=' 11 @? ' 1' F@' D=C ' J >F ' I@' F@C@I ' DC@T Z E @E ' 1 3

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1' F@' D= ? @C' F=E' D '=? 'A F@C' =CI C=C ' J=C<'* '=' C@ A>? A?' A1'
F@' D C@' I@ ?>' F ' 1>3' 4
DA?' =?' ?E ? @?' 1AC' 1AC>@C ' ' =DD@=C@E' F=' ' @CG <' 4' = '24
G=' ?' F@' F=I ' A1' @ ?>' DAGE@C ' = @E' 7 @CG <H' =< ?>' 1AC>@C ' A'
5AGE@C '=?E' @CG <H' >>' 5AGE@C %H GF F' G@C@' ?B=C =I ' A E' "('4 +' =I@ '
?' D= <@ ' G !=DD@E' D' z?' DC ? @E' D=D@C ' F@' I=< ?>' DAGE@C ' 1AC' =C @ ' '
G@C@' GC=DD@E' ?' D=D@C ' A? = ?>' F@' ?=J@' @AC>@' @CG <% F@' ?=J@' A1'
I ' F@' ?=J@' G=' ?A ' B I @! ' F@' D= <@ ' G=' AD@?@E ' F@' =?A F@C' D@CT
DC A?@C' G;@?' A' =' DC ? @C% =?E% C@DC@ @? ?>' F ' ?=J@' A' I@' =2' ' +' :' A'
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@>> H F@?' 1A AG@E' E C@ A? ' 1AC' @' =?E' DC @' ?' ?@ F@C'
J = A?' E E' ACG <H' ?=J@' =DD@=C' @] @D ' ?' Fp' F@=E ?>';' =?E%H
DA?' =' = @' C@ @CB@E% ' G=' F@ E' F=' F ' G=' ?A ' 1AC>@C ' = '
AJ JA?' =G';' F@' C@= 'A11@? @' G=' F@' ! ? A ?>' F@' 1= @' DAGE@C'
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& F‘C@ D@ ‘ A‘ F@‘*"6>#‘6 #‘# ! ‘ A‘ F@‘D @Z E @A1‘=?A F@CH‘ C >F % ‘ FA E‘ = G= ‘F@‘ <@D ‘ ?‘ J ?E% F= ‘ FA >F‘ ?‘ = @ ‘ A1‘ 1AC>@ H % DCAD@C ‘ A‘ = @E% ‘ % = ‘ G@‘ F=B@‘ @@?% 153 J J = @C = ‘ YGF@ F@C‘=? ‘D@C A?‘ I@‘= = ‘ ?Z C@E‘ AC‘ ?A % DCAB E@E‘ F@‘ &6 '‘ : ‘ F@C@I ‘DC@Z E @E% @ ‘ F@‘ 1C= E‘ =?E‘ ? @? A?‘ A‘E@ @ B@‘ A?T @‘ F@‘ F @1‘ ?>C@E @? ‘ A1‘ Zd ‘ A11@? @‘ F ‘ @C% % D@=< ‘ A1‘ ‘ = ‘ F@‘ J =< ?>‘ =‘ 1= @‘ ? C J @?‘ ‘ 7G F‘ ? @?‘ ‘ A‘ E@ @ B@‘ NRd‘=?E‘ C@% % = ‘ =‘ 1= @‘ >?= C@‘ J =E@‘7G F‘ ? @?‘ A‘ E@ @ B@ HN d‘ ?E‘ ‘ ‘ AI @CB@E% F= ‘ ?‘ F@‘GACE‘7E@ @ B@‘H ?J ‘EA I @ ‘I@‘ ? @?E@E‘ A‘I@‘ ? E@E‘=?‘ ? @? ‘ A‘E@1C= E;N;'d =?E‘ F= ! F@‘ A11@? @‘ G= ‘ = ACE ?> ‘E@1 ?@E‘ I ‘ CA @% % = ‘ F@‘ 1= @‘ J =< ?>‘ =‘ ?A @‘AC‘A F@C‘ ? C J @? ‘7G F‘ ? @? ‘ A‘E@1C= E HN=d‘ C@% % = A% ?‘ =?A F@C‘ = @‘E@1 ?@E‘ F@‘ A11@? @‘ A‘ I@‘ F@‘ 1= @‘ J =< ?>‘ =?‘ ? C J @? ‘GF F‘D CDAC ‘A?‘ F@‘ 1= @‘A1‘ ‘ A‘I@‘ >AAE‘ =?E‘B= E%‘1AC‘ F@‘D CDA @ ‘1AC‘GF F‘ ‘G= ‘ C@= @E%‘7G F‘ =‘ E@ >?‘ A‘E@1C= E H 1<3‘ ?E‘ ‘F= ‘ I@@?‘ =C> @E% F= ‘ ‘ ‘?A‘ =? G@C‘ A‘ =‘ F=C>@‘A1‘ 1AC>@C ‘ A‘ = ‘ F= ‘ F@C@‘ G= ‘ ?A'‘ D@ = ‘ ? @? ‘ A‘ E@T 1C= E‘ =? ‘D=C =C‘D@C A?% I@ = @‘6‘2 "6 ‘! ‘ 4‘# *"6>#‘ ‘ 11 @? ‘ A‘ A? @‘ F@‘ C J @,‘ 1AC‘ 1‘ =‘D@C A?‘ EA‘ =?‘ = ‘ F@‘ E"4:6: ‘ A? @b @? @‘A1‘GF F‘ ‘A‘E@1C= E% ‘G % ?‘ A? @JD =T A?‘A1‘=G% A? @‘ ='1C= E @? ‘ ? @? % N d

AC> ?>‘ =‘ I ‘A1‘ @] F=?>@‘D= =I @‘ A‘ F@‘ DC A?@CH‘AG?‘ ACE@C% =?E‘ @C ?>‘ ‘G FA ‘ ?EAC @J @? ‘ = ‘ =‘ @ C ‘1AC‘ =‘E@I % G=‘ FA E@?‘ A‘I@‘=‘ AJD @ @‘A11@? @% NEd

F@‘A11@? @‘A1‘E DA ?>‘A1‘=?E‘D ?>‘=G= ‘1AC>@E‘ I=?<‘ ?A @ ‘ &= ‘FA E@?‘ A‘I@‘ AJD @ @% FA >F‘ F@‘D@C A?‘ A‘GFAJ‘ F@ ‘G@C@ E DA @E‘ A1‘G= ‘ =?‘ =>@? ‘ 1AC F@‘ I=?<‘ A‘ E@ @ ‘ @C@C % =?E‘ =DD @E‘ A‘ F@‘ DC A?@C‘ A‘ D C F= @‘ 1AC>@E‘ ?A @ % =?E‘ F=E‘ F@J‘ E@ B@C@E‘ A‘ F J‘ = ‘ 1AC>@E‘ ?A @ ‘ 1AC‘ F@‘D CDA @‘A1‘E DA ?>‘A1‘ F@J ‘ F@‘7 E>@ ‘F@ E‘ F= ‘ 1‘ F@‘DC A?@C‘D ‘ F@‘?A @ ‘A11‘G F‘ ? @? ‘ A‘E@1C= E% F@‘ ? @? ‘ @] ?>‘ ?‘ F@‘ J ?E‘G= ‘ F@‘@ @? @ A1‘ F@‘ C J @% = FA >F% 1CAJ‘ C J =? @ ‘A1‘GF F‘ F@‘ &!=‘ ?A‘ =DDC @E% F@‘ A E‘?A ‘ ?‘1= ‘E@1C= E‘ F@‘DCA @ AC% N@d

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W+d /V‘ +(O/=‘G +=4‘ ‘ ‘1‘ .N‘ .N‘=‘H‘"‘EAI
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GG(.

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W1d #‘ 9/"9/(:‘6"2> #4' ‘ +4*210
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‘ .‘ /+19‘ G.Y‘'24/‘W]b‘49+4 49 =‘:21P
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/‘ 27/**S‘ /+=/‘ .‘ /+19‘DD‘ /V ‘
))‘H ‘ ;=‘I.N‘ G +=4‘ ‘ ‘1
1#3‘ /V‘, ‘ (0/44‘ ‘ ‘ ‘EY‘*4
1 3‘ /V‘, ‘ 2*:/'‘ ‘ ‘ ‘.A

DC A?@C' A' I ' A <' A' F@' =J A ?' F@C@ ?' D@ 1@E% =?E' F=E' =EB=? @E' F@' JA?@ % G=' F@ E' A' I@' 11 @?' @B E@? @' A1' =?' ? @?' A' E@1C= E' F=' D@C A?';=?E' ' G=' = A' FA E@?' F=' F@' A= F' A1' F@' D@C A?' A' GFAJ' F@' C@ @ D' G=' @C@E% F=' F@' I@ @B@E' F@' DC A?@C' F=E' ?A' F' ? @? % E E' ?A' C@D@' F@' DC@T JD A?' A1' =?' ? @? ' A' E@1C= E% 1* 3

1'=' D@C A?' > B@ 'F ' @JD A @C' =' 1AC>@E%C@ @ D' 1AC' JA?@ % G F' ? @? ' A' J =<@' F@' @JD A @C' I@ @B@' F=' JA?@ '=C@=E 'AI = ?@E' F=' I@@?' =DD @E' ?'=' @C = ?' G= %F@' ' > ' A1' @C ?>' G F' ? @? ' A' E@1C= E' F ' @JD A @E% R3B

F@' ?E J@?' F=C>@E' F@' DC A?@C' G F' 1AC> ?>' =?E' @C ?>' =' @C = ?' GC ?>' ?' F@' GACE '=?E' 1 > C@ '1A AG ?>

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G F' ? @?' A' E@1C= E%' =?E' 'G=' E@ C I@E' ?' AJ@' A ? '=' =?' = A ? =I @' C@ @ D' 1AC' JA?@ % =?E' ?' A F@C '=' =?' = b =? @' =?E' C@ @ D' 1AC' JA?@ ' 7 F@C@' G=' =' A @ % DDAC @E' I ' JA? F ' D= J@? % 1AC' F@' C@ @1' A1' <' =?E' I C =' A1' E@ @= @E' J@J I@C % = @E' F@' 7 A @ ' A1' ? @?' F@DF@CE@ @ %H A1' GF F' C@' DC A?@CH' G 1@' G=' =' J@J I@C% =?E' F@' DC A?@C' G=' F@' @ C@ =C ' =' J@@ ?>' A1' F@' A @ 'F@' G=' E C@ @E' I ' F@' A @ ' A' D= ' ? A' F@' EE@C 1 @ E' =B ?> H =?<' 'GF F' G=' =' F@' ? @' > B@?' F J' 1AC' F= 'D CDA @' !' F@' F@?' ?@] ' J@@ ?>' F@' DC T A?@C' E@ B@C@E' A' F@' A @ ' =' IAA<% @?EAC @E' 7 =B ?> H =?<% " @G' C@@ % EE@C 1 @ E%H =?E' A?' F@' 1 C ' D=>@' G=' GC @?% 7 988' ' ' (@ @ B@E% ' ' H & F@?' F@' E@ B@C@E' F@' IAA<' F@' = E% 7 F= ! ' F@' IAA<' I@ A?> ?>' A' F@' JA?@ H F@' IAA<' G=' D ' ? A' F@' A @ H ' IA] ' F@' = =C ' A1' F@' EE@C 1 @ E' =B ?> H =?<' DCAB@E' F=' '?@ F@C' F@' ?EAC @J@?' ?AC' F@' @? C ' G=' ?' F@' I=?EGC ?>' A1' F J @ 1' AC' A1' =? 'D@C A?' @JD A @E' =' F@' I=?< ' 1' F@' JA?@ 'F=E' I@@?' D= E' ? A' F@' I=?<' A?' F@' F' A1' AI@C% 988% =?E' C@J=?@E' ?' F@' I=?<' ' F@' F' A1' AI@C% 9 % JAC@' F=?' - !4 ' GA E' F=B@' I@@?' = AG@E' A?' ' =' ? @C@ ' F@' DC A?@C' A? ? @E' A' C@ @ B@' I ' = =C ' 1CAJ' F@' A @ ' ' " AB@J I@C% 9 ;' I 'E E' ?A' C@ @ B@' =? 'A F@C' JA?@ ' I@ A?> ?>' A' F@' A @ ' F@' 1= ' F=' F@' : 'F=E'?A' I@@?' D= E' ? A' F@' I=?<' G=' ?A' E AB@C@E' ? ' " AB@J I@C% 9 ' F@' DC A?@C' ?@B@C' D= E'=? ' JA?@ ' ? A' F@' I=?<' A' F@' C@E ' A1' F@' A @ ' 'G=' AIZ@ @E' F=' F@' DC A?@C% I@ ?>' F@' F I=?E' A1' A?@' A1' F@' J@J I@C 'A1' F@' A @ % G=' D=C 'AG?@C' A1' F@' JA?@ %R' =?E' A E' ?A ' I@' J=E@' C J ?= ' =I @' 1AC' E@1C= E ?>' F ' AT AG?@C % =?E' F=' F@' DC A?@C' F=B ?>' C@ @ B@E' F@' 'I@1AC@' F@' @C@E' F@' 1AC>@E' GC ?>% F@C@' G=' ?A' @B E@? @' A1' =? ' @C ?>' G F' ? @? ' A' E@1C= E';' I ' F@' AIZ@ A? 'G@C@' AB@CC @E% =?E' F@' Z C 'G@C@'= <@E% ' & F@ F@C' F@' DC A?@C' @C@E' F@' GC ?>' DA?' =?E' ?' F@' IAA<% <?AG ?>' ' A' I@' 1AC>@E% ?' ACE@C' A' ?E @' F@' A @ ' A' I@ @B@' F=' F@' F=E' D= E' F@' JA?@ ' ? A' F@' I=?<V' -?E ' d E' F@' EA' F ' 1AC' F@' D CDA @' A1' I@ ?>' A? ? @E' ?' F@' A11 @' A1' @ C@ =C % =?E' F@C@I ' AI = ? ?>' 1 C F@C' JA? @ V' CE

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DA?' =?' ?E J @? ' 1AC' 1AC> ?>' =' E@@E' A1' C=? 1@C' A1' F=C@ ' ?' F@' A?EA?' =?E' CA EA?' (= G= ' AJD=? %' G F' ? @? ' ?' A?@' A ? ' A' E@1C= E' F@' = E' AJD=? %' ?' =?A F@C' A' E@1C= E' # ' D A?%' =?E' ?' =?A F@C' A' E@1C= E' & ' AA F%' ' =DD@=C@E' F= ' F@' DC A?@C' G!= ' =' F=C@ I C I <@C' = ' @@E ' ?' D=C ?@C F D' G F' ' " = AC% =?E' F= ' # ' D A?' F=E' @ J D A @E' F@' 1 C J ' A' =' A? E@C=I @' @]T @? % F @1 ' A' I ' C D%' =?E' = G= ' 1AC' C@=E ' JA?@ ' ?' > ' 9 : 8' D A?' G@?' A' F@ C' A ? ?> FA @%' =?E' AA<@E' = ' F ' = A ? ' ?& F@ C' I AA< % ' =?E' F@C@' 1A ?E' F @ 1' E@I @E' G F' =' ? J I@C' A1' A?EA?' =?E' CA EA?' F=C@ %' 1AC' F@' D C F= @' A1' GF F' F@' F=E' > B@?' ?A' = FAC ' F ' @ ' A' @?b C %' =?E' ' G= ' = @CT = ?@E' F= ' ?' %' 9 : 8%' F@' A?EA?' =?E' CA EA?' (= G= ' AJT D=? ' F=E' C@ @ B@E' 1AC' C@> C ' =?E' C@> @C@E' ?' F@' = ' & = ' GA' E@@E ' A1' C=? 1@C' A1' F=C@ ' ; A?@' D CDAC ?>' A' I@' =' # #' 4*' C=? 1@C' A1' @ >F @B@?' F=C@ ' ?' F= ' AJD=? ' 1CAJ ' ' (AI ? A?' A' # ' D A?' ; F@' A F@C' D CDAC ?>' A' I@' =' J =C' E@@E' A1' C=? 1@C' 1AC' F C @@?' F=C@ ' 1CAJ ' F@' =J@' * C ' (AI ? A?' A' D A?' A F' F@ @' E@@E ' D CDAC @E' A ! I@' @]@ @E' I ' D A?' = ' B@?E@@% =?E' A' I@' = @ @E' I ' F@' DC A?@C ' ?' F@' F' A1' > ' 1A AGT ?>% F@' A?EA?' =?E' CA EA?' (= G= ' AJD=? 'C@ @ B@E' =?E' C@> T @C@E' @B@?' A F@C' E@@E ' A1' C=? 1@C% GF F' D CDAC @E' A' A?B@ ' F@' GFA @' A1' F@ @' ' F=C@ ' ?' @' A?EA?' =?E' CA EA?' (= G= ' A' 1 B@' E 11@C@? ' D@C A? ' ; A?@' A1' F@ @' E@@E ' D CDAC @E' A' A?B@ ' @?' A1' FA @' F=C@ ' A' & ' AA F%' =?E' G= ' F@' IZ@ ' A1' F@' DC@ @?' ' ?E J @? ' ' F@ @' E@@E ' D CDAC @E' A' I@' @]@ @E' I ' D A?% =?E' F ' @]@ A?' = @ @E' I ' F@' DC A?@C% ' F@' >?= C@ ' ?' F@' ?= J @' A1' D A?' G@C@' DCAB@E' A' I@' ?' F@' DC A?@CH' F=?ET GC ?>% =?E' ?A ' =?' J = A?' A1' D A?H ' F=?EGC ?> ' D A?' F=E' ?@B@C' = FAC K@E' " = AC' ?C' F@' DC A?@C' A' I ' =? ' A?EA?' =?E' CA EA?' F=C@ ' 1AC' F J % =?E' ?@B@C' = FAC K@E' AC' <?@G' A1' F@' C=? 1@C ' J @? A?@E' ?' F@' E@@E % =?E' ?@B@C' = FAC K@E' F@' DC T A?@C' A' >?' =? ' A1' F@' E@@E ' 1AC' F J !' & F@?' D A?' G@?' A' F@' A ? ?> FA @' ?' > % =?E' AA<@E' = ' I ' = A ?' ?' F@' IAA< %' GF F' G@C@' = @ I @' A' F@' @C< ' A1' F@' 1 C J % =?E' ?' GF F' = ' F@' C=? = A? % A' GF F' F@' E@@E ' A1' C=? 1@C' C@ = @E% G@C@' @? @C@E% D A?' = E' F= ' F@ @' F=C@ ' G C@' ?A ' F ' ; F= ' F@C@' G= ' =' DCA1 ' A?' F@ J ' ; I ' F= ' F@' F=C@ ' G@C@' @C = ? ' ?A ' F ; =?E' A?' F ' I@ ?>' J @? A?@E' A' F@' DC A?@C% F@' C@D @E% T 1' F@' GA?H ' F=B@' =' DCA1 % ' =??A ' F@ D' H ' G= ' I J @E' F= ' F@C@' G= % A?' F@' 1= @' A1' F@ @' C=? = A? % =' A = ' =I @? @' A1' =?' ? @?T A?' A' E@1C= E% =?E' F= ' F@' JAE@' ?' GF F' F@' C=? = A? ' G!@C@' C@= @E' ?' F@' IAA< ' FAG@E' @=C ' F= ' F@ @' G@C@' 1= C' :4F!#*!#

W^H /) ' 220/ ' E' M ' ' ' AEY ' //' 27 '' +14 ' &' ' "(/=/ ' 4' 42' #2<' +' 9 *# 7 49' +*=2' /) ' ' /+(: ' E' ' ' ' .IH ' 79/(/ ' 49/' '+ ; /' 2& 2 ' /' 2& ; #&(/ ' :=' <"2'' 4' 2*/(:) /' ' =+ : ' H J ' 42' 49/' '4/ ' 4 ' ' 0 ' 2 7 ') ' 4' 42' 3/' &2() / : ' 4' 72<*:' 9/' :*/' ; <=4' 4/ *# #2<' 49+4' /J/ (# ; + '' =' 4+0/ '' 42' =+# 49+4' ' 9+:' ' 2' '4/ ' 4' 42' '6<(/' 42' '4/ ' :' 49/' '+4<(+# 12 '=/T</ '1/=' 2& 9 = 9 ; $ ' :' 2 : : ' :' 2V ' ' YD

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I GF I?A A?@ G= AC @B@C A E I@ ?=1= E@1C= E@E AC F@
CAG?' G= C>@E' F= F@C@' G= =?' ? @? A E@1C= E' F@' AJT
D=? FAG?= F@ 'C@> @C@E' F@?@G F=C@FA E@C A?' F@'1= F'A1'
F@ DDA @E' C=? 1@C=?E' F@C@'G= = A'='1C= E'A?' F@' C=? 1@CC@@
GFA' DDA @E' F= F@' F=E'='B= E' C=? 1@C'1CAJ'='D=C =GFA' ?'
C F'E E'?A A?B@ '=? F ?>=?E'GFA' F=E' ?A' @' A' A?B@ '
C@ G@ = 1 ' '?A 'C@b C@E' @C = ? ' A' A? @' ?'DA ?'A1'
=G'=?' ? @? ' A'E@1C= E F= ' ?' F@ @' = @ ' F@' DC A?@C' FA E'
F=B@' DC@ @? ' ?' F ' J ?E' 1?' ? @? A?' A' E@1C= E' ='D=C =C'
D@C A?= 1' F@' A? @b @? @ 'A1'F ' = 'GA E'?@ @ =C 'AC'DA I '
I@' A' E@1C= E' AJ@' D@C A?' ; I ' F@C@' ?E = ' = ' @B@? F@' ='
DA I 'A1' AJ@! D@C A?' I@ ?>' E@1C= E@E' I ' F@' 1AC>@C ' ; =?E'
F@C@'EA@ '?A ' @@J' A' I@'=? ' F'DA I ' ?' F@'DC@ @?' = @'
@ F@C' = 'C@>=CE ' * C' D A?= * C' AA F= AC' F@' AJD=? ' & F'
C@ D@ ' A' * C' D A?= F@' C=? 1@C 'G@C@' J=E@' A' F J' ?' A? @T
b @? @'A1' JA?@ '= = 'D= E=?E' F@'D@C A?'GFA' A'DCA C@E' F@'
C=? 1@C'>A ' * C' D A?H'?=J@' ? A' F@' r'A1'DCADC @ AC ' A1' F@'
AJD=? = A'= ' A'@? @' F J' A'='E B E@?E' ?' F@ C'DCA1 = F@C@'
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" @ F@C'G= ' F@C@'=? 'DA I 'A1' F@' AJD=? ' I@ ?>'E@1C= E@E=
= ' 'EA@ '?A ' =DD@=C' F= ' F@ 'F=E' =? 'DAG@C' A' E@J=?E' =? '
1 C F@C' = '1CAJ' FA' F=C@FA E@C ; A' F= ' F@' I A?' A1'
* C' D A?H' C@E '1AC' F= 'A1' =? 'A F@C'D@C A?= AC' F@' I T
A?'A1'=? 'A F@C'D@C A?H' C@E '1AC'F = A E'EA'?A' ?Z C ' A' F@'
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* C' D A?' I ' F@' C=? 1@C'A1' F@' F=C@ '1CAJ' F J=GF F' ?'DA ?'
A1' 1= ' AAE' ?' F ' ?=J@' ?' F@'IAA< 'A1' F@' AJD=? ' C@ '
G@ = 1 ' ' J@C@ ' =< ?>'1CAJ' * C' D A?' AJ@ F ?>' ?'GF F'
F@'?@B@C' = J@E'=? ' ? @C@ ; =?E' F@'D@C A?' A'GFAJ' F@' F=C@ '
=C@' C=? 1@CC@E' '?A 'DC@Z E @E= ?= J F'!= ' F@' F= ' = = '>A '
F@' F=C@ = 1AC'GF F'F@'F= ';'=E'F ' JA?@ H 'G= ' F@?' C>@E'
F= ' * C' D A?' J >F 'I@' =I @' A?' F ' AB@?=? ' ?' F@' C=? 1@C '
C@ G@ = 1 ' F@' F=C@ ' = = '=C@' C=? 1@CC@E' F@'D CT
F= @C'F= '>A ' F@J ' AG' A E' F@' C=? 1@CC@@' I@'E=J? 1 @E' I '
F'=' AB@?=? = 1' F@C@' ' ?A' A?@' ?'='DA A?' A' >= ? = ' 'V
' F@' AJD=? H' = ' F@' C@> @C' ' F@' @ ' F= ' = ' F@'
AJD=? '=C@'@JDAG@C@E' A' J=<@' @C = ?' = = I ' A'1=C'= '=DD@=C '
FA @' = ' J = ' = 'F=B@' I@@?' J=E@= =?E' F@'GFA @' JA?@ 'D= E' A?'
F@J ';' ?' = 'D HAI=I ' F@' 1= ' ' A' & @' <?AG' F= ' F@' AJ '
D=? 'F=B@' AJD @ @E' FH@' ?@= =?E' F=B@' I@@?'GAC< ?>' '1AC'='B@C '
A? E@C=I @' J@ H NCd

F@'DC A?@C'G= '?E @E'1AC'1AC> ?>'='C=? 1@C'A1' F=C@ ' ?' F@' 9/ "(=2'/(
= @C?' A ? @ ' (= G= G F' ? @? ' A' E@1C= E' 5 ?>= ' 9+:'32')94
A= A?= F@' (= G= ' AJD=? H ' AB@C=?E' C?@C= C@ D@ T '49/ ' ' ,
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49/' 1*//hd 4(+ '=&/ (' +=' 49 /' "(=2 ' /(7+=' '=2*J/ ' 4 9/' "(=2 ' /(1+<=/ :' +' 32# 42' /V/1<4/' +' :// :' 2& 4(+ '=(&/ (' 2& 49/' =9+(/=' 9/' "(=2 ' /(1+** =' 2 '' 49/' =9+(/=' 9+ :' 3// '' "+ :' <" ' 4' 7+=' 9/*:' 49+4' 49/' "(=2 ' /(;)94 3/' 12 ' J 14/ :' 2& &2() /(# 7 49' ' 4/ ' 4' 42' : /P &(+<:' ** ')' 2(49/' ' ' ' 2

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A?@C A? E@C@E F J @ 1 @? @E A F@ C=? 1@C; F@ F=E J A <@ A? @ J D = @E F@ D ?> F J @ 1 I GCA?> A GF= F@ FA >F F C >F = ?? FAG@B@C D@C @ B@ ?A C@= A?> 1AC EA I ?> F= F@ = ?BA B@E =1C= E H ?E (A 1@ E C@ @E F@ Z C F= F@ G@C D=C @ = A GFAJ F@ 1C= E =DD@=C@E ?> F AD ? A? A I@ J A AIB A G@C@ 5 ?> =?E F@ (= G= AJD=? 1*3 ?@ A ? F=C>@E F@ DC A?@C G F @C ?> F@ 1AC>@E G A1 & 11 G F ? @? A E@1C= E @ F@ C = =G A1 & 11 ; =?A F@C G F ? @? A E@1C= E =@C = ?D@C A?> AC D@C A? GFA @ ?= J @ =C@ ?<?AG?> A F@ Z !1AC ?@ A1 F@ DC A?@C G= F@ A?> A1 & 11 GFA @ G G= 1AC>@E C ?@ = @E F= F@ F=E F@=CE F= & 11 F=E F=E =A> A =1AC J @C J =CC =>@ I F=E ?@B@C @@FH=? C@D @E F E AC F EC@?> A1 F@ 1 C J =CT C =>@ =?E <?@G ?A F ?> A1 F@ C @] @? @ @] @D I C@DAC % A A F@C @B E@? @ G= A11@C@E A DCAB@ F= F@C@ F=E I @@?> =? 1AC J @C J =CC =>@ AC =? F E '@?> A1 F@ J =CC =>@ A J =? FA >F F= ?E@C F@ @ C J =? @ F@ = @>= A?> A1 =?> ? @? A E@1C= E F@ F@ C A1 & 11 4G= ?A DDAC @E F@C@ I @ ?> ?A DCAA1 A1 F@C@ @B@C F=B ?> I@@?> =? F@ CL= =G @] @D F@ DC T A?@C 11 ; I = F@ 1AC>@C G= @=C DCAB@E =?E =DD@=C@E F >F J DCA I=I @ F= F =1AC>@C FA E I@ AJT J @E @] @D 1AC F@ D CDA @ A1 E@1C= E ?> AJ@ A?@ F@ @1 F@ b @ A?> A F@ Z C DA?> F@ A ? G F ? @? A E@1C= E =D@C A?> AC D@C A? ?<?AG?> ; =?E F@ Z C A?B @E 11 ; F A J=?% @? @C = ?@E =EA I GF@ F@C =DC A?@C A E DCAD@C I@ A?B @E A?> F =A ? G FA DCAA1 F= F@ 1AC>@E ? C J @? G= =D=I @ A1 @11@ ?> =1C= E A?> AJ @ D@C A?> AC A F@C =?E F@C@1AC@ C@ @CB@E F@ DA ? ; =?E =1 @C =C> J @? A?> I@F= 1 A1 F@ DC A?@C F@ Z E>@ G@C@ @B@? E B E@E DA?> b @ A?% 1>3

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A I Z@ @E‘ F= ‘ F@C@‘ A E‘ I@‘ ?A‘ ? @? ‘ A‘ E@1C= E‘ * @ C ‘ (11ACE‘
= ‘ F@C@‘ G= ‘ ?A ‘ F@‘ J A ‘ C@ J A @‘ F=? @‘ A1‘ F@ C‘ D= ?>‘ F@‘
J A?@ ‘ ;‘ I ‘ ‘ G= ‘ F@ E‘ F= ‘ F@‘ DC A?@CH ‘ >A ?>‘ A‘ * @ C ‘
(11ACEH ‘ =?E‘ DC@ @? ?>‘ F@‘ D=D@C‘ 1AC‘ D= J @? ‘ G= ‘ b @‘ 11 T
@? ‘ @B E@? @‘ A1‘ =?‘ ? @? ‘ A‘ E@1C= E‘ F@ J ‘ 1#3

44/ (‘)‘ +‘
&2() / :‘ 32< ‘ 4#
12<(4 =< ; P
; 2 ‘ =

& F@C@‘ A?‘ =?‘ ?E J @? ‘ =>= ? ‘ =?‘ = AC?@ ‘ 1AC‘ 1AC> ?>‘ =‘
A ? ‘ A C‘ J J A? ‘ =DD@=C@E‘ F= ‘ =‘ E C ?>= ‘ F=E‘ I@@?‘
= @C@E‘ I ‘ C < ?>‘ A ‘ F@‘ GACE ‘ C@ D@ ?>‘ F@‘ E C= ? ?>‘ =?E‘
? @C ?>‘ F@‘ GACE‘ 7 J J A?H ? @=E‘ =?E‘ F ‘ D=D@C‘ F=E‘ I@@?‘
@C @E‘ A?‘ F@‘ DCA @ AC‘ GFA‘ D= E‘ F@‘ A ‘ = ‘ 1‘ ‘ F=E‘ I@@?‘ =‘
>@? ?@‘ J J A? ‘ =?E‘ F@‘ E@ I ‘ = J @E‘ A1‘ F J ;‘ 5= @ A?‘ ‘ F@ E‘
F= ‘ F@C@‘ G= ‘ ?A‘ @B E@? @‘ A1‘ =? ‘ ? @? ‘ A‘ E@1C= E‘ F@‘ DCA @ AC‘
= ‘ F@‘ & A E‘ F=B@ ‘ F=E‘ Z ‘ F@‘ = J @‘ A ‘ A‘ D= ‘ 1‘ F@‘ J J A? ‘
F=E‘ I@@?‘ @E‘ A ‘ ?‘ F@‘ J A ‘ C@> =C‘ J =??@C‘ N@d

L2() / (# ‘ ‘ 7
= =4‘ ‘‘ 49/‘
/ ‘ : / +J2< (‘)‘
42‘) J/‘ + ‘
‘ ‘ = E‘ I ‘ =G< ? ‘ F= ‘ F@‘ ?A A?‘ A1‘ 1AC>@CZH EA@ ‘ ?A ‘ @@J‘
A‘ J <‘ A‘ A? ‘ ?‘ F@‘ A ? @C1@ ?>‘ =‘ J =?H ‘ F=?E‘ =?E‘ @=‘
GF F‘ J = ‘ A1 @?‘ I@‘ EA?@‘ ??A @? ;‘ I ‘ ?‘ F@‘ @?E@=BA C ?>

"\B‘ /) ‘ , ‘ 2 :) =2 ‘ ‘ ‘ ‘ ‘ H ‘ &= &
.EAY ‘ (‘ ! (/+J/=‘ 12 ‘ = : / (=‘ 4* =‘ : /P
1 = 2 ‘‘ /((2 ‘ /2<=‘ / /‘ I 49‘ / : ‘ 2&‘ 49 =‘
,72(O‘ J2*‘ G ‘ ‘‘ DEY ‘ ‘ 24/‘ ‘ &B.‘ ‘ O
W{D /V‘ (‘ +a+)2(+‘ ‘ ‘ GN. ‘ ‘‘
49 =‘ 1+=/‘ 49/‘ 6<(#‘ &2<‘ :‘ 49+4‘ 49/‘ ‘‘ (=2 ‘ / (‘
* +:‘ 49/‘ ‘ 4 / ‘ 4 2 ‘‘ 42‘ : /&(+<:‘ 792/J/ (‘
;) 9‘ 4+0/‘ 49/‘ ‘ 24/ ‘ 3<4‘ 49+4‘ 49/‘ ‘ 4 / ‘ P
4 2 ‘‘ 2&‘ : /&(+<: ‘) ‘ 49/‘ 3+ ‘ O‘ ‘‘ ‘ + (4 1<*+(

: :‘ ‘ 24‘ / ‘ 4 / (‘ ‘ 42‘ 9 / (‘ 12 ‘ 4 / ; ‘‘ *+4 2 ‘ ‘ + ‘ :‘
4‘ 7+=‘ 9 / *:‘ ‘ 49+4‘ 49/‘ 6<(#‘ 2<) 9‘ 4 42‘ 9+J/‘
‘ &/ ((/ :‘ + ‘‘ +44/ ; ‘‘ 4‘ 42‘ : /&(+<:‘ 49/‘ 3+ ‘ 0
1D /V‘ , ‘ +(4/ (‘ D Ó ‘ ‘ .HI ‘ 9/‘
/12 (: / (‘ +&4/ (‘ 12 ‘ =<*4 ‘) ‘ 2 (:‘ / ‘ ; + ‘ ‘
+(O‘ ‘ ‘ X‘ + ‘ :‘ 2**+ ‘ : ‘
R B‘ /V‘ e‘ ! (2749/ (‘ A‘ ‘ ‘ ‘ H.Y ‘
2=+ ‘ T</4 ‘ ‘
W1D /V‘ , ‘ 2** / (‘ A‘ ‘ ‘ ‘ .YM

A' > B@' =?' =DD@=C=? @' A1' C F' A' =' J @C@' E@ @ ' =?E' 1= ' =?E' =DD@=C=? @ @1'
@ F@C' A' J DA @' F= ' DA?' F@' GAC E' = ' F@' A @ J ?' = ' A1' =?A F@C' 4(<49' 42' +'
GF F' F@' '?A' G= ' DC B ' A' AC' = ' @= ' A' J =<@' =' J =?H' AG?' = ' ; /(/' : /1/ 4
=DD@=C' A' F=B@' I@@?' EA?@' = ' ,' J @' GF@?' 'G= ' ?A ' EA?@' =?E' I '
1AC @' A1' F' =' 1= ' A' > B@' '=?' AD@C= A?' GF F' ?' C F' =?E'
Z @' 'A >F '?A ' A' F=B@' NWd' 4
' = ' F@' 1C= E' =?E' ? @? A?' A' E@ @ B@' I ' J DA ?>' DA?'
F@' GAC E' F= ' = ' F@' = ' A1' =?A F@C' GF F' F@' ?@B@C' A? @? @E' A'
=C@' F@' F @1' ?>C@E @? 'GF F' A? @' F ' A11@? @' A' ' F= '
I@@?' FA E@?' F= ' F@' GFA' GC @ ' =' E@@E' ?' =?A F@CH' ?= J @' =?E'
@= ' ' ?' F ' DC@ @? @;' =?E' I ' F ' A J J =?E'L ' ?A ' > ' A1'
1AC>@C ' I@ = @' F@' =G' AA< ' DA?' F ' = ' F@' A F@CH' F=?E' =?E'
@= ?>' I@ ?>' EA?@' I ' F ' =DDCA I = A?' =?E' A J J =?E' 123
A' 1' =' J =?' GC @ ' =' G ' 1AC' =?A F@C' G FA ' =? ' E C@ A? '
1CA J' F J' =?E' F@' 1AC' GFA J' ' ' GC @?' I@ A J @ ' 4 ' 4&E4 '
I@1AC@' ' ' ICA >F ' A' F J' ' '?A '1AC>@C ;' 1AC' ' '?A ' F@' I=C@'
GC ?>' A1' =?' ? C J @?' ?' =?A F@CH' ?=J @' G FA ' F ' DC B '
I ' F@' > B ?>' ' =' 1= @' =DD@^F!=? @' A1' F=B ?>' I@@?' @] @ @E' I '
F J' GF F' J =<@ ' =' J =?' > 'A1' 1AC>@C ' N d A' F@' =??A ' I@'
D ? F@E' = ' > 'A1' 1AC>@C ' GFA' C= @ ' F@' GACE' ! : "! ' A ' A1' ='
IA?E' J =E@' A' F J @ 1' =?E' I @ ' & " ! ' I@ = @' F@C@' '
?A' =DD@=C=? @' A1' =' 1C= E @?' E@ >?' A' F@= ' =?A F@C' =?E' F@'
= @C= A?' ' DC@Z E = ' A' ?A?@' I ' A' F J ' GFA' J =<@ ' ' GFA @'
@ C '1AC' F ' J A?@ ' ' GFA '=BA E@E' I ' ;' @ ' F ' ' @@ J '
GA E' I@' 1AC>@C ' 1' I ' F@' C J =? @ ' A1' F@' = @' ' FA E' ?'
=? ' G= ' =DD@=C' A' F=B@' I@@?' EA?@' G F' =? ' B @G' A1' >= ? ?>' =?'
=EB=? =>@' A' F@' D=C ' F J @ 1' AC' A1' DC@Z E ?>' =' F CE' D@C A?' ;'
=?E' ' ' FA E@?' F= ' F' =?' = @ H= A?' @B@?' G FA ' F@ @' CT
J =? @ ' ' =' J =E@ J @=?AC;' FA >F' ' EA' ?A ' = J A ?' A'
1AC>@C ' 7K3 A' F= ' ' 'G@ ' AI @CB@E' F= ' = ' =? ' C= @' ' ' B@C '
E=?>@CA ' A' = J D@C' ?' F@ @' J = @C ' N Z

(' 3

H*' N "! !E6 6 #' B 4"!

' F= ' I@@?' = @E' ?' =' 1AC J @C' D=C ' A1' F ' GAC<' F= ' ' ' = E' & "('1 "+*='
EAG?' >@?@C= ' ?' F@' IAA< ' F= ' = ' =C@' E r !E6 ' ?' 1AC>@C ;' +11/=2'
=?E' F= ' GF= @Bu C' GA E' J =<@' =' J =?' = @ AC ' I@1AC@' F@' 1= '
?' 1@ A? ' GA E' J =<@' F J' =' DC ? D= ' ?' 1AC>@C ;' I ' F= ' ' '
A? @ B@E' F ' J ' I@' ?E@C AAE' A1' 1AC>@C ' = ' A J J A?' =G' =?E'
GF@C@' ' ' A? E@C@E' A? ' = ' =' J E@ J @=?AC ' N d ?E' G F'
C@ D@ ' A' =' = @' 1 3' DA?' F@' 8' K ' ' :' GF F' GA E' @@ J'
A' @=E' A' =' A? C=C ' A? A?' ' '%@ @GF@C@' AI @CB@E' F= '
1CA J' ' C J =? @ ' F@C@' @@ J ' ?A' C@= A?! 1AC' =< ?>' F= ' = @'
A ' A1' F@' >@?@C= ' C @' F= ' GF@?' =' = @' J =<@ ' =' ?@G' 1@ A?

WWKd' .' +7O' ' ' 1' DM' =' G 3' ^ 3 5' W b' =' 42' 49/' (+=<(/' 2&'
" B' C +7O' ' ' 1' DM' =' G' +' :' : / / : =' =/ /' 4/ " ' 2<19' YE' YN
+1' 3' ^ +3 5' W b " *B' G' +=4' ' ' 1' .N' =' H' " ' 1-' '
W d' 22(' DYM' .' +7O' ' ' 1' DM W [d' 2* ' .' " ' .YD
=' -' +1' 3' ^ 3 5' W b Wcd' 249/$=' 1+=/' 22(' YYY' J .'
WFb' .' +7O' ' ' 1' DM' =' ' +1 J2* ' .' " ' .YD

‘ ? E@? = ‘ =] E‘ ?@ @ =C ‘ EC=G ‘ =1 @C‘ ‘ = ‘ F@‘ A? AJ =? ‘ A1‘ 1@ A? ‘ ?= J @ ‘ = @ AC @ ‘ I@1AC@‘ =?E‘ =1 @C‘ NJ d‘ ?EEF ‘ EA C ?@‘ ‘ A?1 CJ @E‘ I ‘ @B@C= ‘ = @

/(=2 '= '24 "(/=/ '4 +4 49/ 4 ; /' "& '44/(' ')

FC@@‘ DC A?@C ‘ A=C@ ‘ < ? A?‘ =?E‘ C >F A?‘ G@C@‘ F=C>@E‘ I ‘ F@‘ ?E J @? ‘ G F‘ 1@ A? A ‘ @C ?>‘ =‘ 1AC>@E‘ I=?<‘ ?A @‘ 1AC‘ ‘ <?AG ?>‘ ‘ A‘ I@‘ 1AC>@'‘ , ‘ G F‘ ? @? ‘ A‘ E@1C= E‘ F@‘ >AB@C?AC‘ =?E‘ A J D=? ‘ A1‘ F@‘ =?<‘ A1‘ ?> =?E ‘ ?E‘ F@‘ ?T E J @? ‘ = A‘ A? = ?@E‘ F@‘ A F@C‘ = ‘ A ? ‘ 1AC‘ 1AC> ?>‘ =?E‘ 1AC‘ E DA ?>‘ A1‘ =?E‘ D ?>‘ =G= ‘ F@‘ ?A @‘ G F‘ F@‘ <@‘ ? @? ‘ ; A>@ F@C‘ G F‘ A ? ‘ = ?>‘ F@‘ ? @? ‘ A‘ I@‘ A‘ E@1C= E‘ F@‘ D@CT A?‘ A‘ GFA J ‘ G= ‘ A11@C@E‘ ?‘ D= J @? ‘ F@‘ DC A?@C‘ C >F A?‘ A11@C@E‘ F@‘ ?A @‘ b @ A?‘ ?‘ D= J @? ‘ 1AC‘ =‘ D= C‘ A1‘ >= @C ‘ = ‘ =‘ FAD‘ ?‘ A DAC ‘ =?E‘ F@‘ A F@C‘ GA‘ DC A?@C ‘ A=C@ ‘ =?E‘ < ?T A?‘ G@C@‘ ?A ‘ G F‘ C >F A?‘ = ‘ F@‘ J @‘ F@‘ A‘ A11@C@E‘ F@‘ ?A @‘ I ‘ G@C@‘ G= ?>‘ = ‘ 5AC J A F‘ ‘ F@‘ FA E‘ C@ C?‘ A‘ F@ J ‘ ‘ F=B ?>‘ I@@?‘ DC@B A ‘ A? @C @E‘ : 5 ‘ < ‘ <" ‘E 4 " ‘ F= ‘ C >F A ‘ FA E‘ >A‘ AB@C‘ F@‘ G= @C‘ 1CA J ‘ 5AC J A F‘ A‘ A DAC ‘ 1AC‘ F@‘ D CDA @‘ A1‘ D= ?>‘ F@‘ ?A @‘ =?E‘ GF@?‘ F@‘ F=E‘ D= @E‘ ‘ FA E‘ C@ C?‘ A‘ ZA ?‘ F@‘ A F@C‘ GA‘ DC A?@C ‘ = ‘ 5AC J A F‘ ; F@ ‘ = ‘ FC@@‘ 45! 2‘ F= ‘ ‘ G= ‘ =‘ 1AC>@E‘ ?A @‘ =?E‘ F=B ?>‘ I@@?‘ A? @C?@E‘ A>@ F@C‘ ‘ D ?>‘ A11‘ =?A F@C‘ 4 ‘ 4*‘ < ‘ = J @‘ AC ‘ =?E‘ ?‘ F=C ?>‘ F@‘ DCAE @‘ = J A?>‘ F@ J ‘ F@‘ A ? @ ‘ 1AC‘ F@‘ DC A?@C ‘ A=C@ ‘ =?E‘ < ? A?‘ A IZ@ @E‘ F= ‘ F@ ‘ G@C@‘ ?A ‘ > ‘ A1‘ F@‘ F=C>@‘ J =E@‘ =>= ? ‘ F@ J ‘ ?‘ F ‘ ?E J @? ‘ ?A ‘ F=B ?>‘ I@@?‘ DC@ @? ‘ = ‘ F@‘ J @‘ F@‘ A F@C‘ D A?@C‘ @C@E‘ F@‘ ?A @‘ ! ?AC‘ A‘ ?@=C‘ = ‘ A‘ I@‘ =I @‘ A‘ = E‘ =?E‘ = ‘ F J ‘ ;4=?E‘ F= ‘ F@ ‘ A E‘ I @‘ F=C>@E‘ A? ‘ = ‘ = @ AC @ ‘ I@1AC@‘ F@‘ 1= ‘ F@‘ Z C ‘ 1A ?E‘ F= ‘ F@‘ 1AC>@E‘ ?A @‘ G= ‘ @C@E‘ I ‘ F@‘ DC A?@C‘ C >F A?‘ ?‘ A? @C ‘ F‘ F@‘ A F@C‘ GA‘ DC A?@C ‘ =?E‘ 1A ?E‘ z=@C=‘ = ‘ FC@@‘ > ‘ F@‘ DC A?@C‘ C >F A?‘ G= ‘ @1 ‘ 1AC‘ @] @ A?‘ ; I ‘ = ‘ A‘ F@‘ A F@C‘ GA‘ A?‘ =‘ = @‘ C@ @CB@E‘ F@‘ Z E>@ ‘ F=E‘ ?A‘ EA I ‘ F= ‘ F@ ‘ G@C@‘ @? @E‘ A‘ =?‘ = b = ‘ A?‘ F ‘ ?E J @? ‘ F=C> ?>‘ F@ J ‘ = ‘ DC ?T D= ‘H F@ ‘ ?A ‘ I@ ?>‘ DC@ @? ‘ = ‘ F@‘ J @‘ A1‘ F@‘ @C ?>‘ AC‘ A‘ ?@=C‘ = ‘ A‘ I@‘ =I @‘ A‘ =11ACE‘ =? ‘ = =? @‘ A‘ F@‘ = A J D @‘ GFA‘ = = ‘ @C@E‘ F@‘ ?A @‘ 1 3

2 '=4(</4 J/ "(/=/ '1/ +4 4 ; /' & <44/(P ')

04‘ ! ‘ =‘ = @C‘@= @‘ C=F= J ‘ ‘ C@DAC @E‘ A‘ F=B@‘ = E‘ 7 ‘ F= ‘ 1C@b @? ‘ I@@?‘ F@ E‘ F= ‘ GF= ‘ GA E‘ = J A ? ‘ A‘ =‘ A? C B@‘ DC@ @? @‘ = ‘ A J J A?‘ =G‘ G ‘ ?A ‘ I@‘ 11 @? ‘ DA?‘ =?‘ ?E J @? ‘ ?E@C‘ = = @ ‘ ‘ = @‘ ?E@C‘ F ‘ = @‘ A CC@E‘ I@1AC@‘ J @= ‘ @ !I ‘ GA‘ D@C A? ‘ G@? ‘ ?‘ A? @C ‘ A‘ @C‘ =‘ 1AC>@E‘ ?A @‘ ;‘ A?@ G@? ‘ ? A‘ =‘ FAD‘ A‘ @C‘ ‘ GF ‘ F@‘ A F@C‘ C@ J = ?@E‘ = ‘ 4& ‘ ! ‘ #! 6 ‘ ! ‘ < ‘ " G‘ ‘G= ‘ A IZ@ @E‘ F= ‘ F@‘ = @CG= ‘ ?A ‘ =I @‘ = ‘ =‘ DC ? D= ‘ ‘ =B@E‘ E;F@‘ DA ? ‘ ‘ ; =?E‘ F@‘ Z E>@ ‘ G@C@‘ A1‘ AD ? A?‘ F= ‘ F@‘ @C@C‘ A? ‘ G= ‘ =I @ H NAd

F@‘ = @‘ @1@CC@E‘ A‘ I ‘ F@‘ @=C?@E‘ Z E>@‘ G= ‘ DCA I=I ‘ F= ‘ A1‘ = ?‘ ‘ M6 ! ‘ ?‘ GF F‘ ‘ G= ‘ FA E@?‘ ?A ‘ A‘ I@‘ 11 @? ‘ A‘ J =<@‘ =‘ D@C A?‘ =‘ DC ? D= ‘ ?‘ @C ?>‘ =‘ 1AC>@E‘ ?A @‘ A‘ DCAB@‘ ‘ F‘ D@C A?‘ = J @‘ G F‘ F@‘ @C@C‘ A‘ F@‘ AG?‘ ?‘ GF F‘ ‘G=

" B‘ G‘ +=4 ‘ ‘ ‘ 1 ‘ .N ‘ =‘ AG‘ " ‘ NDH ‘ e ‘ ? ‘ e ‘ HYH
ND. ‘ ‘ :‘ =/ /‘ J2* ‘ . ‘ " ‘ .YD ‘ ‘ O W2 ‘ #‘ ! (+9+ ; ‘ ‘ '‘ 49/‘ 1+=/‘ 1 &
" B‘ /V‘ ' 2+(/= ‘ 4O '=2 '‘ + ' :‘ (+ : # ‘ &2(‘ &2( ) ')‘ + ' :‘ <44/(')‘ +‘ 19/T</ '
( ) 942 ' ‘ G‘ +=4 ‘ ‘ ‘ 1 ‘ .N ‘ =‘ AG‘ ‘ ‘ <' / ‘ .E. H ‘ ‘ 4+(O ‘ (; ‘ */+: ‘
" ‘ NDI ‘ ‘ ‘ GY ‘ ' :‘ =/ /‘ /V‘ &‘ EI ‘ '‘ 49/‘ '24/ ‘ '4‘ =/‘ <"2 '‘ 49 =‘ =<3P
+ : 121O ‘ ‘ ‘ GIN‘ K /V‘ &‘ 4/ 7+(4 6/14 ‘ J2* ‘ . ‘ " ‘ .AY ‘ / ‘ O

@C@E%' G@?' A ' G ' 1CAJ' @' ??' = ' G F' F@ ' F=E' D '
D' =' @' I@1AC@' F@' J@' GF@?' ' G=' @C@E%' ZA ?@E' F J' =>= ?'
?' F@' C@@ ' =' @' =1 @C' F@' @C ?>%' =?E' = ' 8 ' =CE H E =? @'
1CAJ' F@' D = @' A1' F@' @C ?>' =?E' C=?' =G= ' GF@?' F@' @C@C' G= '
=DDC@F@?E@E%' NDd
' 'F= ' I@@?' F@ E' F= ' GF@C@' @B@C=' D@C A? ' G@C@' ?' AJ ' 2'=4(<14 JZ'
I ?= A?%' =?E' ZA ? ' A AD@C= @E' ?' J =< ?>' 1AC>@E' =?<' A1' ?> =?E' [
?A @ %' F@ ' G@C@' = ' > ' = ' DC ? D= %' FA >F' @= F' A1' F@ J ' 49/' +14<+'
@] @ @E F J @ 1' =' E ? ' D=C ' A1' F@' 1AC>@C %' =?E' FA >F' &2()/(#
A?@' A1' F@ J ' G= ' ?A ' DC@ @? 4GF@?' F@' ?A @ ' G@C@' AJD @ @E' I '
F@' >?= C@%' 1 3'
A' = A' 1' @B@C=' J =<@' E ? 'D=C 'A1'=' 1AC>@E' ? ? J@? %'@= F'
' =' DC ? D= %' FA >F' F@' EA@ ' ?A ' <?AG' I ' GFAJ ' F@' A F@C' D=C '
=C@' @] @ @E%' =?E' FA >F' ' ' 1 ? F@E' I ' A?@' = A?@' ?' F@' =I @? @'
A1' F@' A F@C %' NCd' A' = A' F@' J =<@C ' A1' F@' D=D@C' =?E' D = @'
C@ D@ B@ '1AC' F@' D CDA @' A1' 1AC> ?>' =' ?A @%' =1 @CG=CE ' 1 @E' D'
I ' =' F CE' D@C A?%' =C@' DC ? D= ' ?' F@' 1AC>@C ' G F' F= ' D@C A?%'
FA >F' @= F' @] @ @E' F ' D= E' ?' F@' =I @K @' A1' F@' A F@C %' =?E'
G FA ' <?AG ?>' I ' GFAJ ' F@' A F@C' D=C ' G@C@' @] @ @E%' 1 3
'GF@C@' FC@@' D@C A? ' G@C@'ZA ? ' ?E @E' ?E@C' F@' ' & ' :%' ?>' D = A'
' %' ' %' 1AC' 1@ A? A ' ?>' D = @ ' A? = ? ?>' JDC@ A? ' A1' 1AC>?>'
1AC>@E' 1AC@ >?' ?A @ %' 'G= ' F@ E' F= ' F@'Z C ' J ' @ @ ' AJ @' A?@'
D=C =C' J @' =1 @C' = ' FC@@' F=E' I @ AJ @! A??@ @E%' =?E' J ' I@'
= 1 @E%' ?' ACE@C' A' A?B ' F@ J %' F= ' = ' F' J @' F@ ' G@C@' = '
@ F@C' DC@ @? ' A>@ F@C'= ' A?@' = ' A1' ?>' AC' = @E' ?' A?@' F'
= %' = ' I ' GA' ?>%' =?E' A?@' G= F ?>' = ' F@' EAAC' A' DC@B@? ' F@'
A F@C ' I@ ?>' E CI@E%' AC' F@' <@' ;' =?E' F= ' ' G= ' ?A ' 11 @?'
A' F@G' F= ' F@' D=C @ ' G@C@' >@?@C=' E@= @C ' ?' 1AC>@E' ?A @ %' =?E'
F= ' = ' E 11@C@? ' J @ ' F@ ' F=E' ?> ' @E' F@' D = @ %' =?E' G@C@' ' '
?E B E = ' ?' DA @ A?' A1' 1AC>@E' ?A @ ' =<@?' 1CAJ ' F@ J %' N d
?E' GF@C@' FC@@' DC A?@C 'G@C@' ?E @E' ?E@C' F@' =J @' @ A?' ')(+J ')'
1AC' 1@ A? A ' @?>C=B ?>' =' DCAJ AC ' ?A @' A1' F@' J D@CAC' A1' "*+4/='
(=%' =?E' ' =DD@=C@E' F= ' F@' D = @ ' G@C@' @?>C=B@E' I ' =?'
?> F J =?%' GFA' G= ' =?' ??AE@? ' =>@? %' =?E' GA' A1' F@' DC A?@C '
A? 'G@C@' DC@ @? ' = ' FA' J @' GF@?' F@' ACE@C' G= ' > B@?' 1AC' @?>C=BT
?>' F@' D = @ %' I ' F@ ' = E' F@ ' G@C@' @ J D A @E' A' >@ ' ' EA?@' I '
=' F CE' D@C A?%' =?E' F@C@' G= ' A J @' @B E@? @' A' AF?@ ' F@' F CE'
DC A?@C' G F' F@' A F@C' GA' ?' I @b @? ' D=C 'A1' F@' C=? = A?' ;'
' G= ' F@ E%' F= ' ?' ACE@C' A' 1 ?E' = ' FC@@' > %' F@' Z C ' J ' I@'
= 1 @E' F= ' F@ 'ZA ? ' @ J D A @E' F@' @?>C=B@C%' I ' F= ' ' G= '
?A ' ?@ @ =C ' F= ' F@ ' FA E' = ' I@' DC@ @? ' GF@?' F@' ACE@C' G'='
> B@?%' = ' ' GA E' I@' 11 @?' 1' A?@' 1 C ' AJ J ? = @E' G F' F@H
A F@C' GA%' =?E' = ' FC@@' A? CC@E' ' F@' @ J D A J @?' A1' F@'
@?>C=B@C%' 1 43
?' F@' 1A AG ?>' = @' =' G 1@' G= ' ?E @E' = ' =' DC ? D= ' ?' G @ @=G @'
=' 1AC>@C ' A?' F@' : ' @A' %' ' - %' ' %' =?E' F@C' F I=?E' = ' I ' F@ ? IT
=?' = @ AC ' I@1AC@' F@' 1= ' = ' AJ J A?' =G ' F@' ?E J @? ' 7H3 !1HH
F=C>@E' =C=F' * A?E ' G F' 1AC> ?>' =?' ACE@C' =?E' @C 1 = @' 1AC "'9 =+3=/'1/'
C@ @ B ?>' DC K@' J A?@ %' GF F' F=E' I@ AJ @' E @' A A?@ @?C ' O'27 ')*#

" B' /V' ' +J =' 244 ')9+ ;' /'4' HMD' ? J2*' .' "' .YE
==' .EMY' ' ' ' . .H "B' /V' ' + ; =' D' ' ' ')C1.
"OB' /V' ' *)*/#' ' ' ' I.Y 44*/ : +*/' + ' :' ! +=/*//'
" ' /V' ' SO722 :' ' ' ' ' ' ' 5 6' /) ' ' * K@= %' ' ' ' ' YDY
HMI' ? J2*' .' "' .YE +44/=2' '
W=B' /V' ' + : /' ' ' ' ' ' '

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= AC%’ =’ D@ ’ A11 @C’ ?’ F@’ ?=B= ’ @CB @%’ G F’ ? @? ’ A’ E@1C= E’ F@’ AJJ A?@C ’ A1’ C@@?G F’ A D = ;’ =?E’ AF?’ *ACC %’ G F’ ? ?>%’ A ? @ ?>%’ = E ?>%’ DCA C ?>%’ , %’ F@’ = E’ =C=F’ * ACC ’ @C’ AJJ ’ F@’ = E’ 1@ A? ’ F@’ @ A?E’ A ? ’ F=C>@E’ =C=F’ * ACC ’ G F’ F=B ?>’ @C@E’ F@’ AHE@C’ =?E’ F@’ @C 1 = @’ I ’ F@’ ? @J@?’ A1’ AF?’ *A C ’ ?E’ F@C@’ G@C@’ J=? ’ A F@C’ A ? ’ ?’ GF F’ F@’ NC11@? @’ G= ’ F=C>@E%’ G F’ AJ@’ B=C = A? ’ ’=DD@=C@E’ F= ’ ’ = AC%’ GFA @’ \=J@’ D CDAC @E’ A’ I@’ I C I@E’ A’ F@’ ACE@C%’ G= %’ ?’ F@’ @=C’ 9 %’ =’ D@ ’ A11 @C’ A?’ IA=CE’ F ’ * =Z@ H’ 1C >= @’ F@’ C@E@C < @ ?;L’ =?E’ ?’ F’ =D= ’ I@ = J@’ @? @E’ A’ =’ F=C@’ A1’ @C = ?’ DC K@’ JA?@ ’ =C ?>’ 1CAJ’ F@’ =D C@’ A1’ =’ C F’ B@ @ ’ ?’ "AB@JI@C%’ 9 %’ F@’ DC A?@C%’ =C=F’ * ACC %’ GFA’ G= ’ F@’ G 1@’ A1’ F@’ A F@C’ DC A?@C%’ AI?’ * ACC %’ =?E’ C@= ’ AC’ DC@ @?E@E’ E= >F @C’ A1’ ’ = AC%’ =DD @E’ A’ =’ @C<’ ?’ F@’ F@b @’ A11 @’ ?’ C@@?G F’ A D = %’ 1AC’ F@’ D= J@? ’ A1’ F@’ DC K@’ JA?@ ’ E @’ A’ ’ = AC;’ =?E’ DCAE @E’ = ’ F@’ = J@’ J@’ F@’ ACE@C’ = @E’ ?’ F ’ ?E J@? ’ F@’ G= ’ E@ H@E’ A’ = ’ =>= ?’ ?’ = IA ’ @?’ E= %’ =?E’ G@? ’ =G= %’ @=B ?>’ F@’ ACE@C’ G F’ F@’ @C< ’ ?’ = IA ’ 1A C’ AC’ 1 B@’ E= ’ F@’ = J@’ => = ?%’ =?E’ @]DC@ @E’ >C@= ’ =?] @ ’ A’ I@’ J J @E = @ ’ D= E’ F@’ JA?@ %’ GF@?’ F@’ G= ’ A E’ F= ’ F@’ JA?@ ’ F=E’ ?A ’ @ ’ AJ@’ ?’ ;’ =?E’ F@’ ACE@C’ G= ’ > B@?’ I= <’ A’ F@C’ G F’ =’ C@b @ ’ F= ’ F@’ GA E’ ?A ’ =DD ’ =>= ?’ ? ’ F@’ G= ’ E ’ ?1AC J @E’ F= ’ F@’ JA?@ ’ F=E’ I@@?’ C@ J @E’ A’ F@’ A1 @’ JA ’ J J @E = @ ’ =1 @C’ F ’ @ A?E’ B %’ F@’ A F@C’ DC A?@C%’ AF?’ * ACC %’ GCA @’ =’ @ @C’ A’ F@’ @C<’ %A1’ F@’ F@b @’ A?’ F@’ IZ@ ’ ?’ F@’ 9 F’ # @ @JI@C%’ ?A @’ G= ’ > B@?’ A’ =C=F’ * ACC ’ F= ’ F@’ DC K@’ JA?@ ’ G= ’ AJ@’ ?%’ =?E’ F= ’ F@’ J >F ’ C@ @ B@’ F@’ F=C@’ A1’ ’ A’ GF F’ ’ = AC’ G= ’ @? @E;’ DA?’ GF F’ F@’ G@? ’ A’ F@’ A11 @’ G F’ F@’ =JI@’ ACE@C’ =?E’ ! @C 1 = @%’ GF F’ F@’ DCAE @E’ ;’ =?E’ F=E’ ?@=C ’ AI = ?@E’ F@’ G=CC=? ’ 1AC’ F@’ D= J@? ’ A1’ F@’ JA?@ %’ GF@?’ C J =? @ ’ A CC@E’ GF F’ = @E’ D A?%’ =?E’ F@’ =?E’ F@C’ F I=?E’ G@C@’ FAC ’ =1 @CG=CE ’ =DDC@F@?E@E ’ = AC%’ GFA @’ ?=J@’ D CDAC @E’ A’ I@’ >?@E’ A’ F@’ ACE@C%’ A E’ ?A ’ GC @%’ =?E’ G= ’ AI >@E’ = G= ’ E’ J =<@’ =’ J =C<’ GF@?@B@C’ I ’ >?= C@’ G= ’ C@b C@E’ ;’ =?E’ F@’ ?=J@’ A1’ F@’ A11 @C%’ I ’ GFAJ’ F@’ @C 1 = @’ D CDAC @E’ A’ I@’ I C I@E%’ G= ’ ?A ’ ?’ F ’ F=?EGC ?>’ F@’ =?E ACE’ A1’ F@’ FA @’ ?’ GF F’ F@’ DC A?@C ’ AE>@E%’ = @E’ F= ’ F@’ DC A?@C%’ AF?’ * ACC %’ F=E%’ ?’ GA’ AC’ FC@@’ ? =? @ %’ ACE@C@E’ F ’ G 1@%’ =C=F’ * ACC %’ A’ >A’ A’ C@@?G F’ A D = ’ C@ D@ ?>’ =IA ’ 9 ’ A1’ DC K@’ JA?@ ’ E @’ A’ ’ = AC%’ F ’ G 1@H’ 1= F@C;’ F= ’ F@’ G= ’ A? =? ’ = < ?>’ A1’ F=B ?>’ I@@?’ ’ = ACH’ F DJ = @’ ;’ F= ’ = ’ A?@’ J @’ =C=F’ * ACC ’ A E’ F@C’ F I=?E’ F= ’ F@’ F=E’ I@@?’ A’ C@@?G F’ ;’ F= ’ F@’ DC K@’ JA?@ ’ G= ’ ?A ’ F@?’ C@=E ;’ F= ’ F@’ A11 @’ F=E’ ?A ’ @ ’ C@ @ B@E’ ;’ =?E’ F= ’ F@%’ F@’ G ?@ %’ F=E’ @?’ F@’ DC A?@C%’ AF?’ * AJ %’ JA?@ ’ DA?’ F@’ I@ @1’ F= ’ F@’ F=E’ ’ DC K@’ JA?@ ’ A’ C@ @ B@’ @’ = A’ GAC@’ F= ’ F@’ C@= ’ I@ @B@E’ F= ’ =C=F’ * ACC ’ G@? ’ A’ C@ @ B@’ ’ ?’ AI@E @? @’ A’ F@C’ F I=?EH’ ACE@C ’ ?E%’ = ’ A’ F ’ 1= %’ ’ G= ’ DCAB@E’ F= ’ F@’ DC A?@C%’ AF?’ * ACC %’ I=E’ >?@E’ =’ D=D@C%’ = ?>’ F= ’ F ’ G 1@’ F=E’ = @E’ ?’ F ’ I ?@ ’ @? C@ ’ ?E@C’ F ’ ACE@C ’ =?E’ E C@ A? ’ ’ G= ’ = A’ DCAB@E’ I ’ =’ G ?@ ’ GFA’ F=E’ 1AC J@C ’ I@@?’ =’ =D = ?H’ @C<’ ?’ F@’ ?=B %’ F= ’ ?’ "AB@JI@C%’ 9 %’ F@’ DC A?@C%’ AF?’ ’ C@DC@ @? @E’ A’ F J’ F= ’ F@C@’ G= ’ =IA ’ }q’ DC K@’ JA?@ ’ E @’ A’ F ’ 1= F@C’ ? =G!%’ ’ = AC%’ = ’ =’ = <@C

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' - 'NJd A' ?E@C' = ' = @' ' G= ' F@ E' 11 @?' =1 @C' B@CE ' A' E@ C I@' =' E@@E' = ' =' 7E@@E' D CDAC ?>' A' I@' =?' ?E@?T C@%' I@=C ?>' E= @' F@' 'A1' "AB@J I@C%' 9 %' I@ G@@?' A?@' ' ' A1' F@' 1 C 'D=C %' & ' 'A1' F@' @ A?E' D=C %' =?E' (' 'A1' F@' F CE' D=C %' =?E' D CDAC ?>' A' I@' J=E@' =?E' @] @ @E' I ' F@' = E' (' ' =?E' 3' H 7 3(A' ' ' 11 @?' A' E@ C I@' =' E@@E' = '!=' @C = ?' E@@E' D CDA E ?>' A' I@' J=E@' A?' F@' ' E= ' A1' * =C F%' 9 .% I@ G@@?' (' & =J ' A1' F@' A?@' D=C %' =?E' # ' C 11 F ' A1' F@' A F@C' D=C %' =?E' D CDA E ?>' A' I@' =?' ?E@C @= @' I ' F@' = E' ' & =J ' A' F@' = E' # ' C 11 F ' A1'! @C = ?' =?E %' @?@J@? %' =?E' DC@J @ ' F@C@ ?' J@? A?@E%' IZ@ ' A' F@' D= J@?' A1' F@' @=C ' C@?' A1' 9 %' D= =I @' A ' F@' ' E= ' A1' * =C F%' ' @B@C ' @=C%' =?E' D CDAC ?>' A' A? = ?' =' AB@?=?' I ' F@' = E' # ' C 11 F %' G F' F@' = E' (' & =J %' 1AC' F@' D= J@?' I ' F@' = E' # ' C 11 F ' A' F@' = E' (' & =J ' A1' F@' @=C 'C@?' A1' @ >F ' DA ?E HNAd A' =?' ACE@C' 1AC' F@' D= J@?' A1' JA?@ ' ' 11 @? ' E@ C I@E' = ' 7=' @C = ?' ACE@C' 1AC' F@' D= J@?' A1' JA?@ %' A' G %' 1AC' F@' D= J@?' A1' HN ad A' =' G=CC=?' 1AC' F@' D= ?@?' A1' JA?@ ' J= ' I@' = @E' A' I@' 7=' @C = ?' G=CC=?' 1AC' F@' D= J@?' A1' JA?@ %' A' G %' 1AC' F@' D= J@?' A1' F@' J' A1' b' P1 *' A%' =1 @C' B@CE %' ?E@C' F@' -' & ' ' ' -9%' =' A ?' F= ' I@@?' F@ E' 244#' GF F' 6 #' F= ' F@' DC AD@C' F=E' ?' F 'DA @ A?' GA'D = @ %' DA?' GF F' G= '@?>C=B@E%' ?' F@' 5A F' =?> =>@%' T6' @C = ?' DCAJ AC '?A @' 1AC' D= J@?' A1' 1B@' *;'!(!(!*! ' D DAC ?>' A' I@' =' DCAJ AC '?A @' 1AC' D= J@?' A1' JA?@ ' A1' =' @C = ?' 1AC@ >?' DC ? @%' F= ' H A' = %' A1' " A = %' F@?' I@ ?>' < ?>' A1' =' @C = C' 1AC@ >?' A ? C ' = @E' 5A =?E H!*3' A' ' '@?A >F' A' E@ C I@' =' DCAJ AC '?A @' = ' 7=' @C = ?' DCAJ AC ' ?A @' 1AC' F@' D= J@?' A1' - %HG FA '=EE ?>' F@' E= @' AC' > B ?>' =? '1 C F@C' E@ C D A?%'N d A' =' A ?' F=1> ?>' F@' @C ?>' A1' !' =' @C = ?' DCAJ AC '?A @%' D CDAC ?>' A' I@' =' DCAJ AC '?A @' @1' ' %' 1AC' F@' D= J@?' A1' JA?@ %' A' G %' 1AC' F@' D= J@?' A1' 8I%H F= ' I@@?' FA E@?' >AAE%' N d

'<6 '*4 '<! ' =??A %' ?' =?' ?E J@?' 1AC' 1AC> ?>' AC' @C ?>%' I@' E@ C I@E' = ' =' I ' A1' @] F=?>@' >@C @C= Z!%' I ' ' J = ' I@' E@ C I@E' = ' 7=' I =?<' I ' A1' @] F=?>@ H 1>3

'=4(< ; /'4 ; "(2"/(*# :/=1(3/ :' +=

& F@C@' F@' DC A?@C' F=E' I@@?' A?B @E' A1' @C ?>' =?E' D IT F ?>!' = ' C @' =' 1AC>@E' DCAJ AC '?A @%' G F' ? @?' A' E@1C= E

W' d /) ' , ' ; 49' G' 2V' ' ' HAE' 2*/(:)/' " B /) ' ' 2** '=' G' 9 ' 29' It.' 2*&/' XW2d /) ' , ' +J /=' N ' ' ' IGD' G' ' ' ' ' .DD W6Ad /) ' , ' ++O/' G' ' ' ! ' ' YY' ' ' E' ' ' ' YGY' +' :' =/' N' ' ' ' IGN' '24/' e B' /' /) '] ' 4O '=2' ' ' -' ' HGA' "3B /) ' ' 2)/(=' N' ' ' ' I.' +(O/' ' +' :' 2=+' T</4' W(d /V' , ' +(=9+' /(' ' ' ' ' ' ' IYY' 9/(' 7+=' +4' & (=4' +' : &&/(/ '1/' 2& 2" ' 2' ' + ; 2') ' 49/' */+('/ :' 6< :) /=' 79/49/(' 49/' 12< '4' 2<)94' '24' 42' 9+J/' =9/7 '' 79+4' ; 2' /# &*2(' =' 7/(' +' :' 49/ (' J+*</' ? 3<4' +4' +' =<3=/T</ '4' ; //4 ') ' 49/' : /&/14' 7+=' 12' = : /(/ :' 42' 3' 1<(/ :' 3# 4* ' D' ! /2' I' 1' YI' =' G. ' 49/' 2&&/ '1' 3/ ') ' : /=1(3/ :' '' 49/' 72(:=' 2&49/' =4+4<4/

B /V' ' ' <() ==' D' M' ' ' INM' 44*/ : +*/ ' ' ' /V' &' + ; /=' D' ' ' ' AAH' +44/=2' ' ' +' : /(=2 'S' 1+=/' G' /7' .ED W d +' : /(=2 'S' 1+=/' G' /7' .ED' +<' 42' ' WJKd /V' , ' (O144' ' ' ' ' GA.' 9/' &2(; ' 2& 49/' ' =4(< ; / '4' 7+=' 0' 4 =/J/ '' : +#=$ =) 94' ' "(2 ; =/' 42' "+# 49 =' ; # ' 9 **' 2& /V19+') / '$ 79 19' =' "(2"/(*# 2'*# +' "(2 ; ==2(#' '24/' ? 9<4' 49/' .A' ! /2' G' 1' H' ; / ' 4 2' ')' 03+' 0' '24/=' 3+' 0' 3 **=' 2& /V19+') / $ 1' =// ; =' 42') J/' 49/=/' 3+' 0' '2=4' 3 **=' 49+4' : / '2 ; ' +4 2 '' 2& 3+' 0' 3 **=' 2& /V19+') / ' +=' 49/(/' +(/ ' 2 249/(' 3+' 0' 3 **=' +' =7/(')' 49+4' : /=1('' P 4 2' ' ' 22($' 1+=/' ' /7 ' ' NM' <*' *210' ' 9/*:' 49+4' +' 3+' 0' '2=4' 3 **' 12<*:' ' 24' 3/' : /=1(3/ :' ' ' +' ' : 14 ; /' 4' &2(/ ; 3/aa*/ ; / '4' +=' +' 3 **' 2& /V19+') /

@ 1’ ?’ F@’ 1= @’ A1’ F@’ I ’ A1’ @] F=?>@’ ?’ F@’ DC@ @?’ = @’ N=?E’ F@’ 1= @’ A1’ F@’ I ’ ’ F@’ A? ’ F ?>’ A’ I@’ A? E@C@Ed’ ?A F ?>’ J AC@’ =DD@=C ’ GF@?’ G@’ @]=J ?@’ F@’ =B@C J@? ’ F=?’ F= ’ ’ ’ =’ I ’A1’ @] F=?>@’ EC=G?’ I ’D4< ’ g @’ A?’ D4< ’ - ! 2’ ; F@C@1AC@’ GF@?’ F@’ ?E J@?’ = ’ F= ’ ’G= ’EC=G?’ A?’ D4< ’d! 2’ I ’F@’ ?=J @’ =?E’ E@ C D A?’ A1’ D4< ’ - ! 2’ ’ ’ =I CE’ =?E’ C@D >?=?’ A’ @ 1’ 1AC’ F@’ ?=J @’ =?E’ E@ C D A?’ A1’ A?@’ F1 >’ =??A’D CDAC’ A’ F@’ =?A F@C’ F ?>’ F@’ EC=G@C’ A1’ F@’ ?E J@?’ G= ’ @E’ ? A’ F ’ I ?E@C’ I ’?A’ A? E@C ?>’ GF= ’G= ’ F@’ AC > ?= ’ = @’ A1’ F@’ I ’ =?E’ GF= ’ G= ’ F@’ =DD@=C=? @’ A1’ ’ =1 @C’ F@’ = @D =? @’ G= ’ D ’A?’ ’; ’ @@J ’= ’ 1’F@’ E E’?A ’ C@ A @ ’ ?E@C’ GF= ’ @CJ ’ AC’ I ’GFAJ ’=’ I ’ A1’ @] F=?>@’ J= ’ I@’ = @D @E’ FA >F’ F@’ I ’ G= ’EC=G?’ A?’ D4< ’ - ! 2’ ’ J >F’ F=B@’ I@@?’ ’= @D @E’ <’’ D4< ’ d! 2’ 1AC’ =’ I ’ J= ’ I@’ = @D @E’ I ’A F@C’ D@C A?’ F=?’ FA @’ A’ GFAJ’ ’ ’E C@ @E’ = ’GF@?’ ’ ’ = @D @E’ 1AC’ F@’ FA?A C’ A1’ F@’ EC=G@C’ AC’ A1’ =? ’A1’ F@’ ?EAC @C ’ N4d

’ ’ : 14 ; / ’4 &2(&2( ) ’)’ +’ 3 ** 2& /VP 19+ ’)’ / : (/14/ :’ 42’ +’ =2 ; ’ 2(/*+ ’ : ’ +’ :’ + ; ; / (=*/#’ 79 19’ =4+4/ :’ 49+4’ =<19’ 3 ** "<("2(4/ :’ 42’ 3/’ : (/14/ :’ 42’ ! /2()’ 2(:’ ’ ’ + (: ’ ** + ;’ 2(/P *+ ’ : ’ +’ :’ 92 ; +=’ +6<’ ; / (=*/#’ 3# 49/’ ’ + ; /’ +’ :’ : /P =1("4 2’’ 2& +’ =2 ; ’ 2(/*+ ’ : ’ +’ :’ + ; ; / (=*/#’ 7+=’ 92*: / ’’ 42’ 3/’ 3+ : ’ 2’’ 49/’ "(’1 "*/’ 49+4’ 49/’ 72(:’ 0 "<(’ "2(4’$ =) ’ & /= 49+4’ 79 19’ +"" /+(=’ 2’’ 49/’ &+1/’ 2& 49/’ ’P =4(< ; / ’4

?’ +’ = @’ GF F’ A CC@E’ FAC ’ =1 @CG=CE ’ F@’ DC A?@C’ +=’ ?E @E’ 1AC’ 1AC> ?>’ !’6’ E6E "’ 5 "! ! 2 ’E>"E4" ! 2’ 4’ < ’6 ’&(# ’" *4 "’E6 ’ & ’4 *’& 4 ’ ’ E= @E’ F’ @D @ J I@C;’ . ’ G F’ F@’?=J@’ FA J= ’]A?’ F@C@ ? A’ I C I@E’ E>"E4" ! 2’ 4’ F=B@’ I@@?’ >?@E’ I ’ FA ’]A?’ @C<’ =?E’ A’ I@’ #!" #’ 4’ Y 4"2 ’ ‘ &(# d! 6!"# ’ & J ’ * AC@ =?E’ =?E’ FA ’ = J J @C @ ’ A1’ , @’ I=?<@C ’ =?E’ D=C ?@C ’ : ’ ’ < ’ (6& ’ 6 #’ # "!E !4 ’ 4 *’ " ’ - 6 4& ’ 4" 6 # ’6 #’ = 6& & " ’ ’1AC’ F@’ D= J@? ’A1’ F@’ J’ A1’ N ’ , ’ ;’ H F@’ @?AC’ A1’ GF F’ = E’ 1= @’ GC ?>’ , ’ = ’ 1A AG ’ B K ’ ’

(’ * @ C ’ =? AJ ’ * AC@ =?E’ =?E’ = J J @C @ ’ D @= @’ A’ D= ’ A’ * C ’ CAA< ’ AC’ I@=C@C’ F@’ J ’A1’ @?’ 5A ?E ’ 1AC

G ’ , #

7 @D ’ F’ . :’ ’

G F’ ? @? ’ A’ E@1C= E’ F@’ = E’ @A’ E ’ 6 ’ , ’ F@C@’ G= ’=’ @ A?E’ A ? ’ 1AC’ @C ?>’ ’; =?E’ A Z @C’ A ? ’ F=C> ?>’=?’ ? @? ’ A’ E@1C= E’ A F@C’ D@C A? ’ ?’ AIZ@ A?’ G= ’ J =E@’ ?’ =CC@ ’ A1’ Z E>J @? ’ F= ’ F@’ E C@ A?’ A1’ F@’ I ’G=<’ J DCAD@C ’ E@ C I@E’ ?’ F@’ ?E J @? ’; =?E’ @?’ A1’ F@’ Z E>@ ’ GFA!J @ ’ A’ A? E@C’ F@’ = @’ G@C@’ ?=? J A ’A1’ AD ? A?’ F= ’ F@’ Z E>J @? ’ FA E’ XI@ =CC@ @E’ A?’ F@’ >CA ?E’ F= ’ F@’ GACE’ E>"E4" ’ J DAC ’GF= ’ =DD@=C ’A?’ F@’ 1= @’ A1’ F@’ ? C J @? ’ F@’ =DD=C@? ’ =?E’ ?A ’ F@’ @>= ’ J DAC ’ ; =?E’ F= ’ F@’ I ’ ?’ b @ A?’ A E’ ?A ’D CDAC ’ A’ I@’ E C@ @E’ A’ ACE’ 6 ??= CE’ I@ = @’ F ’ ?= J @’ E E’ ?A ’=DD@=C’ DA ’ F@’ 1= @’ A1’ ’ @C’ ’ ?’ E@ B@C ?>’ F@ C’ AD ? A?’ = E’ 7 E’ = @ ’F=B@’ > B@?’C @’ A’ J F’ @=C? ?>’ =?E’ =C> J @? ’ A?’ F@’ GACE ’ n’E>"ER4" ’]’ =?E’ [’ 4" P’ =?E’ F@’ IAA< ’=C@’1 ’A1’E ? A? ’ = ’ A’ F@’ J @=? ?>’ A1’ F@ @’ GACE ’ =?E’ F@’ ?@ @ 7’ A1’ ?>’ F@’ A?@’ AC’ F@’ A F@C’ A1’ F@ J ’ ?’ ?E J @? ’GF@C@’ GC @?’ ? C J @? ’ =C@’ A’ I@’ = @E’ ; I ’ =J A?>’ F@’ J =? ’ = @ ’ DA?’ F ’ IZ@ ’ =?’ 1 ?E’ ?A’Z E = ’ E@ @C J ?= A?’ F= ’ < (E>"E4" ’ =?E’ < ’ 4" /+ ’ ’)’ 2& FA E’ IA F’ I@’ = @E’ 1’ =? ’ = @’ GF= @B@C ’ 5 CDAC ’ J @=? ’ F@

"OB’ /+ : ’)$’ 1+=/ ’ G’ /+19 ’ ANM ’ G +=4 ’ ’ M’ . N ’ =’ AY ’ "’ NE . ’ <**/ (’ ’ +*=2’ =+ : ’ 49+4’ +=’ 49/’ 2" ’ ’ 2’’ 2&’ 49/’ 6<:) /=’ "(21// : /:’ ; / (/*#’ 2’’ 49/’ ’&2(P ; +* 4# ’ 2&’ 49/’ (/12(: ’ 49/’ "(=2 ’ / (’ ;)94 9/’ +) + ’" ’ : 14/ :’ &2(’ 49 =’ 2&&/ ’1/ ’ <4 ’ ’2’ 249/ (’ ’ : 14 ; / ’4 7+=’ "(/&/ ((/ :’ ? +’ :’ +&4/ (’ (/ ; + ’ ’) ’’ 1<=42 : # 4 ** +(19’ .DNI ’ 9/’ (/1/ J/ :’ +’ &(/’ "+(: 2 ’’ +’ -’ 7+=’ : =19+() / :’ G’ /+19 ’ ANH

: 214(' / 7+= +)+ '' +14/ :' <"2' ' '' 49 = 1+=/

J @? ' F=C>@E' F@' DC A?@C' G F' 1AC> ?>' =' @C = ?' D=D@C' GC ?>% E>"E4" ! 2' A' I@' =?' ? =?E' I ' A1' @] F=?>@% =?E' A' I@' E?=G?' I ' A?@' ' & ' & C >F % I@=C ?>' E= @% ! D&)"' :1 ' c4 ' . % =?E' A' I@'#!" #' 4' ! <6! 'M45 ' = "'F<4" 4 'D4< 'W" "' 6 #'D4< 'J4" 56 ' < ''4> 2 "'I=?<@C % A?EA?% I ' F@'?=J@'=?E' E@ C D A?'A1' * @ C '#AG?% FAC? A?%'=?E' A% I=?<@C % A?EA?% C@b C ?>' F@J % @?'E= '=1 @C'E= @% A'D= ' A * C ' & J ' J JA? 'AC' ACE@C' 9 ' !% , % =?E' F@?' @ ?>'A ' F@' @?AC% I 'GF F' F@'I ' =DD@=C@E% = ' F@' 1= ' C@= 'G= % A'I@' E C@ @E% 7 &('M45 ' F<4" 4 '6 #'J4 P I=?<@C % A?E 1='N d

'' ' : 14 ; / '4 &2(' &2() ')' +' =1('" (/1/ "4 =) ' / :' [' /(% =4+4/ :' 49+4' 49/' "(P =2' / (' &2() / :' 49/' (/1/ "4 0 7 49' 49/' '+ ; /' M' * /(' 49/(/<942' =<3P =1(3/ : ' "<(P "2(4 ')'4 '' 9+J/' 3//X' =) ' / :' 3# 2' /' 9(=42"9/(' /('$ 8 ' &' 49 =' : &&/(=' &(2 ;' 49/' &2(/P)2 ')' 1+=/='^

?' =' = @' GF F' > CC@E' =IA ' F@' =J@' J@% < ' ?E J@? % GF F' G= '1AC' 1AC> ?>'!=' C D' C@ @ D % F=C>@E' F=' F@' DC A?@C' 1AC>@E' '7G F' F@' ?=J @' ' @C' F@C@ ? A' *! C I@E%E>"E4!P! 2' A' F=B@' I@@?' >?@E' I 'A?@' FC ADF@C' @C;H=?E' 'G='AIZ@ @E' F=' F ' J '?@ @ =C ' I@' I=E% = ' ' @C!'E E' ?A % ?' F@'1= @' A1' % D CDAC ' A' I@' FC ADF@C' @C% I ' J >F ' I@' F=C @ % , '%H I ' F@' A C ' FA >F ' F=' F ' = @' E 11@C@E' ?' AJ@' E@>C@@'1CAJ' F@' GA' = @ ' @E' ?' DDAC ' A1' F@' AIZ@ A?% ?=J@ % D4 P' 6 '1*3' =?E' H! <"! P' 6 ;'1#3' ?= J F' =' F@' ?A @' ?' D4 P' 6 'E E'?A 'D CDAC '1A' I@' =' I=?<' ?A @% =?E% F@C@1AC@% F@' ?E ' J@? % F=C> ?>' F= '!'#!#' 4' D CDAC % G= ' I=E;' =?E' ?' Y! <"! P' 6 ' = ' F@' ?=J @' A1' ACE' 6 ??= CE' E E' 4 '6EE 6"' 4 ' < '*6 'A1' F@' I % ' A E' ?A ' D CDAC ' A' I@' E C@ @E' A' F J ';' I ' <6 ' ?' F@' DC@ @? ' = @% F ' C D' C@ @ D ' I@ ?>' I C I@E' G F' F@' ?=J @' ' @C% =?E' F@' ?E J @?' F=C> ?>' F= ' ' D CDAC @E' A' I@' >?@E' ?' F@' ?=J @' A1' FC ADF@C' @C% =' = F @C' A1' F@' =?<' A1' ?> =?E% ' G= ' ?A % DA?' F@' 1= @' A1' % C@D >?=? ' A' F@' I % AC' ? A? @? ' G F' @ 1% 1 3

+=/=' 70/((' 49/' '=4(< ; / '4 =' =/4' 2<4

' ?E J @? ' AJ@ J@ ' A? = ?' A ? % ?' GF F' F@' ? C T J @? '=C@' @' A % ' J = ' I@' @1 ' A' C@1@C' A' F@' 1A AG ?>' E@ T A? 'E@ E@E' I@1AC@' F@' D= ?>' A1' F@' -:' ,' -8' 3 @ ' ' 9';' @@ ' 2(3 .'6 'E' 4 5 6

& F@C@% DA?' =?' ?E J @?' 1AC' 1AC> ?>' =' C@ @ D ' 1AC' JA?@ % ' G= ' AIZ@ @E% F= ' ?' F@' C@ @ D % = ' @ ' 1AC F% AJ@' A1' F@' J ' G@C@' ?' 1 > C@ % 'G= ' FA E@?' F= ' F@' C@ @ D ' J ' I@' D C @E' @]= % AC' 'GA E' I@' =' B=C =? @' N Md

&' 4' 3/' '' +' &2(/) '' *+ ' P)<+) /' 49/(/' ; <=4' 3/' +'' ')* =9' 4(+'=*+4 2'

' F@' AIZ@ ' A1' @ ?>' A ' F@' ? C J @?' % F= ' F@' A C' J = ' @@% =?E' I@' =I @' A' 1AC J' =?' AD ? A?' GF@ F@C' ' I@' F= 'GF F' ' '= @>@E' A' I@% =?E' G @ I@C' ' 1= ' G F ?' F@' = 'AC' =G' A?' GF F' F@' DCA @ A?' '1A ?E@E%Z E> J @?' G!=' =CC@ @E' DA?' =?' ?E J @?' 1AC' 1AC> ?>' =' 5C =?' C@= C '?A @%A?' F@' >CA ?E' F=' F@' ?E J @?' E E' ?A ' A? = ?' =? ' ?> F' C=? = A?' A1' F@' ?A @% GF F' G= ' ?' ='1AC@ >?' =?> =>@% 123

" B J :=+**S' 1+=/' G' +=4' ' ' 1' .N ' AY' "' NEI' G' /+19' YYG' '24/' W]b '' +=4' ' ' 3 : ' 4' =' =+ :' 49+4' 49/' 6<:)/=' 9/*:' 49/' ' : 14 ; / '4' 9+: ' <"2 ''49/' +<492(4#' & ! *19(=4S' 1+=/' 492<)9' <* ' */(' ' : =+"" (2J/ :' ; <19' 2&' 49+4' : /4/(' ; ' '+4 2 '' 79 19' 927/J/(' 9/' +: ; 44/ :' 12<*:' '24' 3/' : =4 ')< =9/ :' &(2 ;' 49/' "(/=/ '4' / - /

W1b J* .' "' YYY

" B J .' "' YNN' '24/' R B

" B //J/S' 1+=/' ' /+4*' +' :' +7P (/ '1/' ' +' :' 92 ; =2' ' ' G' /+19

EME' E. I' G' +=4' ' ' 1' .N' 4' AY "' NEI' 9/' "2 '4' 7+=' =+J/ :' &2(49/' 12 '= : /(+4 2 '' 2& 49/' 47/*J/' 6<:)/=' ? 3<4' 4' : 2/=' '24' +"" /+(' 79+4' 49/ ('2" ' 2 '' 7+=' 49/(/' 3/ ')' 249/(' 236/14 2 '=' 42' 49/' 12'P J 14 2 '' 2& 49/' "(=2' /(' 792' 7+=' &2(49/(P 7+(:=' 4(/ :' +' :' 1+" 4+**#' 12' J 14/ :' 2'' +' 249/(' ' : 14 ; / '4' "/' : ') &2(' 49/' =+ ; /' 2&&/ '1/

W wb' 27/**S' 1+=/' G' +=4' ' ' 1' .N' =' AH' "' NDY

"3B' /V' ' ! 2*: =4/ ' ' ' ' ' IDH

& F@C@' =?' ?E J @? ' F 'C>@E' F@' DC A?@C' G F' F=B ?>' ?' F ' 9/' 792*/'
DA @ A?' D = @ ' DA?' GF F' F' F@C@' G= ' @?>C=B@E' =' DCA J AC ' '=4(< ; /'4
?A @' ?' F@' 5A F' =?> =>@% GF F' G= ' @ ' A % =?E' GF F' = E' ; <=4 32
?A @% I@ ?>' C=? = @E' ? A' F@' ?> F' =?> =>@% ' = '1A AG 12(114*#
4(+'=*+4/ :

7 = F' ?A @' A1' F@' 6 ?>EA J' A1' 5A =?E
7 A' F@' I@=C@C' A1' 'F F' F@'] F=?>@' 11 @' G % ?' AJD =? @'
G F' F@' CA = ' E@ C@@' A1' F@' 8 F' A1' DC % 9- %D= ' F@' J' A1'
1 B@' > E@C ' 1<3' ?' F@' @ =I F@E' CC@?
7 F ' ?A @' G ' I@' C@ @ B@ ' ?' = ' F@' >AB@C? J @? ' @ =I FT
J @?
7 A = ' AJ J =C % 7 (A = ' AJ J =C %
7 @A1 ' K J =?AG < %H 7 ' 5 = @C H

?' F@' C J' =?E' J =C> ?' A1' F@' D = @' A1' F@' ?A @% ?' F@' 5A F'
=?> =>@% G@C@' @C = ?' GACE % GF F' ?' ?> F' E@?A @E' 7 @=C%H
7 9- : %H =?E' 71 B@' 1 AC ? '' =?E' ?A?@' A1' F@ @' GACE ' G@C@' = @E' ?'
F@' C=? = A?' F@' E@ C@@' A1' 9- % J @? A?@E' ?' F@' ?A @%'
ACE@C@E' F= ' F@' ?A @ ' G@C@' A' 4I@' J =C<@E' A1' F@' @=C' 9- : % =?E'
E C@ @E' F= ' F@' @=C' 9- :' FA E' I@' D ' DA?' F@ J ' ;' =?E' F= '
71 B@' 1 AC ? ' H FA E' I@' D ' DA?' F@ J ' ;' =?E' F@' GACE ' 7 @=C%H
7 9- : %H =?E' 71 B@' 1 AC ? ' H G@C@' D=C ' A1' =' >@? ?@' 5A F' ?A @% =?E'
=' ?A @' G FA ' F@ @' G!ACE ' GA E' ?A ' I@' C@ @ B@E' = ' F@' >AB@C?T
J @? ' A11 @ ' ' G= ' A IZ@ @E' F= ' F ' C=? = A?' G= ' ?= C= @'
=?E' ? 11 @? % =?E' F@' DA ? ' G= ' C@ @CB@E' 1AC' F@' A? E@C= A?'
A1' F@' Z E>@ % GFA' @]DC@ @E' ?A' AD ? A?' DA?' % = ' F@ ' F@ E' F@'
A?B A?' C >F ' DA?' =?A F@C' A ? % I ' ' ' = E' F= ' F@ ' G@C@'
?=? J A ' A1' AD ? A?' F= ' F@' C=? = A?' G= ' J D@C1@ % 1!3' '
' = E' A' F=B@' I@@?' F@' AD ? A?' A1' F@' J =ZAC ' A1' F@' Z E>@ ' ?'
F@' =J @' = @' F= ' E@ C I ?>' =' 1AC@ >?' ?A @' GFA ' ?' F@' ?> F'
=?> =>@' ' ?A ' 11 @?' ?' =?' ?E J @? ' 1AC' 1AC>@C % ?A G FT
=?E ?>' F@' -' ,' ' & ' :% % - % ' ;' 1C3' I ' F ' AIZ@ A?%'
DCAB E@E' F@' E@ C D A?' ' ?' F@' GACE ' A1' F@' = @' C@= ?>' F@'
A11@? @% =?' A? ' I@' =<@?' =EB=? =>@' A1' I ' E@ J CC@C% =?E' ' C@E%'
=1 @C' B@CE % I ' F@' .' @A' : %H ' :% ' - % 1D 3
& F@C@' =?' ?E J @? ' F=C>@E' F@' @C ?>' A1' =' I ' A1'@] F=?>@%'
GF F' G= ' = ' 1A AG ' ; `

7 " A ' 9 ' e' # @' . F' # @ @ J I@C
7 ' 5@ @C I C>F% @' :' A % 9 : ' ' 5 ' i 8 ' >' ' b = C@'
J A ' E@' E= @' D=C' @ @' @ C@' E@' F=?>@' ' HACEC@' E@' ?A J J @ '
=' A J J @' E@' ?b' @? ' BC@ ' @C ?>% B= @' @?' J A J J @% b @'
D= @C@K' B=? ' H=B ' E@' %
7 " A ' .9 ' 7 (P ' ,' A
: .
7 * @ C ' CAG?% # =?% = J J ?>% # I ?
7 5= = I @% A?EC@ H

" B' 4' =' 0)<*: / ' = $ ' '49/' ,(/ "2(4' '' G '24/' W+b' /' '24/' Wwb' "' YNA
' ' IG ' +' :' =// ' D' ' ' I .E' R B' 3 : ' +' :' ' ' ' ' ' IYY'
I .N' 7 9 19' =// ;' 42' =927' 49+4' 49/' 72(.:' +' :' =/ /' /V' &' +(=9+' /(' .:' "' YNY'
7+=' 0)<*: / ' = $ +=' 4' 7+=' 236/14/ :' 49+4' 79/(/' 49/' : /=1("4 2 '' 2&' 49/' '24/' =
49+4' 7+=' '24+' ')* =9' 72(:' ' !) J/ ' '? 49/' 236/14 2 '=' 4+0/ ' ' 7/(/' 49+4'
W=B /V ' +((=' /V &' 2=/=' /V' 49/' '24/' 2<) 94' 42' 3/' =4+4/ :' 42' 3/' +' '24/'
' +**=' D' ' ' ' IGN' '24/' W+b' /V' ' ' 49/' &2(/) '' *+')<+) /' +' :' 49/ '' 49/'
' +(=9+' /(' ' 2=/=' ' ' ' ' ; /+' ')' 2& 4' '' ')* =9' ? 49+4' 4' 2<) 94'
' IYY 42' 3/' =4+4/ :' 42' 3/' &2(' 49/' "+# ; /' 4' 2&'
"*B' /V ' +((= D' ' ' ' IGN' +' : &2(/) '' ; 2' /#' +' :' 49+4' 49/' J+*</' '

?E' GF F' ?' ?> F' ' = ' 1A AG '$ `

7 " A ' 9 ' h' # @' . F' # @ @ J I@C
7 ' 5@ @C I C>F% F@' : F' > % 9 : ' AAE' 1AC' i8 ' @CT
?>' ' 1A C' J A? F 'E= @' I ' F ' I ' A1'@] F=?>@% A' F@' ACE@C' A1'
A C @ B@ % F@' J ' A1' 1 B@' F ?E @E' DA ?E ' @C ?>% B= @' ?' J T
@ 1% GF F' A ' G ' D= ' = ACE ?>' A' F@' =EB 'Z@' A1
7 " A ' . 9 ' A . # / . N' , ' A
: .
7 * @ C ' CAG?% # =?% = J J ?>% # I ?
7 5= =%I @% A?EA? H

' G= ' A I Z@ @E' F = ' F ' G= ' ?A ' =' I ' A1' @] F=?>@% 1AC' F= ' '
A? = ?@E' ?A' ACE@C' A' D= % =?E' F= ' F@' GACE' 7 BC@ ' H #!#' 4 '
J @=?' DA ?E G I % DA?' =' = @' C@ @CB@E% F@' A?B A?' G= ' < #'
C >F ' 1X3

/ '2(' 1 F< ' C@ = ' A1' F@' ? C J @? ' ' = ' DC@1= @E' I ' F@' GACE %
7 A' F@' @?AC' 1A AG ?>% F = ' ' A' = %H , % AC% 7 ?' F@' GACE ' =?E'
1 > C@ ' 1A AG ?>%H GF F' J DAC ' =?4 ' @]= ' AD ' ' GF@C@' < '
?E J @? ' G= ' 1AC' 1AC> ?>' =' @C = ?' C@ @ D ' 1AC' J A?@ % 7= ' 1A AG %H
=?E' F@?' @ ' 1AC F' F@' C@ @ D ' ?' GACE ' =?E' 1 > C@ % = ' F@' Z E>@ '
F@ E' F= ' F@' GACE % 7= ' 1A AG %H G@C@' A' I@' 6 ' = ' < ' =J @' = '
7 = ACE ?>' A' F@' @?AC' 1A AG ?>%H AC' 7 ?' < ' 54"# ' 6 #' 1 > C@ '
1A AG ?>;H =?E' F= ' 1' F@' DCA @ AC' F=E' 1= @E' ?' !# ' ?'
DCAB ?>' F@' C@ @ D ' B@C I = J ' = E% ' GA E' F=B@' I@@?' =' 1= = '
B=C =? @% N J d' F@C@1AC@% FA >F' F@C@' I@ S' ?A' @ F? = ' 1AC J' A1'
GACE ' 1AC' @] DC@ ?>' F= ' F@' ? C J @? ' ' @ ' 1AC F' ?' GACE ' =?E'
1 > C@ % ' ' @=C' F= ' F@' DCA @ AC' =??A % I ' B=C ?>' F@'
@C J ' ?' GF F' F@' ? CAE @ ' F@' ? C J @? % C@ @B@' F J @ 1' 1CA J'
=? ' = C= ' GF F' ' A F@CG @' C@b @% 1C!3

' @C= ' ?' @ ?>' 1AC F' F@' @?AC' A1' F@' ? C J @? % =' J @C@' @C= '
=C =?A@' YG ' B=C =? @' G ' ?A ' B = @' F@' ?E J @? ' F ' GF@C@% DA?' =?'
?A ' = @ ?E J @? ' GF F' F=C>@E' F@' DC A?@C' G F' 1AC> ?>' =' I ' A1'
@] F=?>@% =?E' A? = ?@E% ?' F@' GACE ' @ ' 1AC F% F@' GACE ' 7B= @'
" ! #P =?E' F@' I ' DCAE @E' ?' @B E@? @% FA >F' A F@C G @' ACT
C@ DA?E ?>' G F' F= ' @ ' 1AC F% G= ' G C @?;' B= @' " ! # P ' G= '
FA E@?' F= ' F@' B=C =? @' G= ' ?A ' J = @C = % = ' ' E E' ?A ' F=?>@% F@'
GACE% NAd' A' GF@C@' F@' DC A?@C' G= ' ?E @E' 1AC' @C ?>' =' I ' A1'
@] F=?>@% E C@ @E' A' * @ C ' * = @C J =?% 5@ @C % =?E' A % G F' =
1AC>@E' ?EAC @ J @? ' F@C@A ?;' =?E' ' G= ' A I Z@ @E' F= ' F@C@' G= ' =
B=C =? @' ?' F@' ?E J @? % GF F' J DAC @E' A' @ ' A ' F@' I '
= ACE ?>' A' ' @?AC% ?= J F' = ' F@' @ @C' "' ?' * @ C % G= '
I J @E% =?E' F@' = I I C@B = A?' * @ I% J >F ' =?E' 1AC' GACE ' GF F'
* @ C % A E' ?A ;' F@' A I Z@ A?' G= ' AB@CC @E;' =?E' F@' Z E>@ %
DA?' F@' DA ? ' I @ ?>' C@1@? @E' A' F@ J % F@ E' F= ' F@' ?E J @? '
G= ' 11 @? % 1E3' A' GF@C@' F@' DC A?@C' G= ' F=C>@E' G! F' 1AC> ?>

')* =9' ; 2 ' /# =92<*:' 3/' =4+4/ : ' +' :' ; 49S' 1+=/ ' +*0 ' HIG ' 79/(/' 4' =' =+ :'
49+4' 49/' G' ' H' **' I ' 1 ' . GH ' =' H' : 2/=' '' 49/' (/ ''2(4' 49+4' 79/(/' +' : / / :' 7 49' 49/'
' 24' /V4/ ' :' 42' =<19' ' 24/=' //' ' 24/' W+=b' ; +(0' 2& ' ' 7+=' &2() / : ' 49/' ' : 14 ; / ' 4'
D' ' ' ' IH. ' ' = ' / / :' ' 2' =/4' 2<4' 49/' ; +(0
" B' /V , ' =<:<(=0 /' ' ' ' ' ' " B' H' 9 4 ' (; ' ' .MIM ' K
' IGN " B' +(4S' 1+=/ ' .' /+19' . IA ' G' +=4'
" B' 2 f#/ S' 1+=/ ' G' *+10 ' DED ' . ' ' 1 ' : ' =' AI ' "' NDD
/+19' DD' G' +=4' ' ' 1' .N' =' AH " B' *: & /*: S' 1+=/ ' +6*/#' '
"' NDM' '' 79 19' *+=4' 3220' 49/' */+(' / :' <(9+ ;' < ; ' ==' .E. . '
7 (4/(' =+#=' 49+4' 9/' 1+' ' 24' 3<4' T</=4 2'

K7] 92*: / '' 49+4 +'" 'P : 14 ; / '4 +J/((')' 4'42' 9/'=) ' / :' 3# ' ' '=4/+:' 2& =4+4 ')' 49+4 4' "<("2(4/ :' 42' 9+J/' 3// '" =)9/ :' 3# 9 ; ' +=' 3+:

((2' /2<= =4+4/ ; / '4 2& 49/' "<("2(4 2& +' 12< '4# 12<(4 '24 1/

F@' ACE@C' A1' ' FA J A?' F@' J' 8V %B= @' C@ @ B@E% 6 #' !2 #' <'' = "'' = > <! 4 '1AC' ' % '=?E' ' F ? A?%GF F' F ' A1' @] F=?>@' A' 1= @ ' J =E@' =?E' A ? @C1@ @E% '= ' 1A AG ' N @ ?>' A ' F@' F d% , % G F' ? @? ' A' E@1C= E' ' F ? A?% , ' ;H =?E' ' =DD@=C@E' F= ' F@' >?= C@' A' F@' I % 7 @?C ' F ? A?%HG= ' =' 1AC>@C ' ; ' G= ' A I Z@ @E' F= ' F@' ?E J @? ' =B@CC ?>' ' A' F=B@' I@@?' !2 #' <'' <!& ' N=?E' ?A ' J @C@ ' F= ' R'E>"E4" #' A' F=B@' I@@?' >?@E' I ' F J d% GF F' G= ' =' I =? = ' = @>= A?% G= ' E T DCAB@E ' ?E' F@' Z E>@ %A?' =' = @' C@ @CB@E% G@C@' A1' F= ' AD ? A?% a 3 F@' DC A?@C' G= ' ?E @E' ?E@C' F@' ' , ' 3 @ ' 8% ' 8. % 1AC' 1@ A? A ' = ?>' A' I @' E@ B@C@E' A' ' =C<@' =' @C = ?' D=D@C' 1= @ ' D CDAC ?>' A' I I' =' AD ' A1' =' @C = ?' DCA @ ' A1' F@' A ? ' A C ' A1' @ @ @C F C@ ' F@' EA J @? ' G= ' @? @E' ?' F@' A C % =?E' F@=E@E' G F' F@' ?= J @ ' A1' F@' D = ? 11' =?E' E@1@?E=? % =?E' ' I AE ' G= % 7 =<@' ?A @' F= ' A ' =C@' C@b C@E' A' DCAE @' = ' F@' =I AB@' A C % A?' F@' C = ' A1' F ' = @% A?' F@' . F' A1' @D @ J I @C' ? =? % F@' @B@C= ' = A ? ' =?E' J @ J AC=?E J '> B@?' A' A % AC' A' A C' G 1@% I ' F@' =I AB@' D = ? 11' =' B=C A ' J @ H ?E% A?' =' = @' C@ @CB@E% ' G= ' F@ E' F= ' F ' G= ' =' ?A @' A' =' E@1@?E=? ' A' DCAT E @' @C = ?' EA J @? % =?E' F= % 1' F@' ?A @' G= ' ?A ' AJ D @E' G F% @ A?E=C ' @B E@? @' J >F ' I @' > B@?' $ I ' ' E E' ?A ' D CDAC ' A' I@' =? F ?>' ?' F@' F=D@' 41' DCA @ ' A1' F@' A C % 153

& F@C@' F@' ?E J @?' F=C>@E' F@' DC A?@C' G F' *4! 2!62' =' C@ @ D ' A' =?' = >? J @?' ' A1' =' @ 3= ?' J ' ?' =' ?=B ' I % =?E' F@' @?AC' A1' F@' C@ @ D ' = ' @ ' 1AC F' J @C@ ' A? @E' A1' F@' >?= C@ ' ' A1' F@' D=C % ' G= ' FA E@?' A' I@' E@1@ B@'Z' A?' F@' >CA ?E' F= ' F@' J @C@' >? ?>' A1' F' ?= J @% CC? @ ' A??@ @E' G F' F@' DC@B A ' J = @C% E E' ?A ' D CDAC ' A?' F@' 1= @' A1' ' A' I@' =' C@ @ D % =?E' F= ' ' A >F ' A' F=B@' I@@?' =B@CC@E' F= ' F' ?=B ' I % , % A>@ F@C' G F' F' >?= C@% E E' D CDAC ' A' I@% =?E' G= ' =' C@ @ D % , % =?E' F= ' F@' DC A?@C' 1@ A? A ' 1AC>@E' F@' =J @% N d ' GF@C@' =' 1AC>@E' C@ @ D % = ' @ ' 1AC F' ?' F@' ?E J @? % G= ' ?' F ' 1AC J % 7 9 F' * =C F% . . ' @ @ B@E' F@' A? @? ' X=IAB@' I ' J @% @DF@?' & F@C %H =?E' ' =DD@=C@E' ?' @B E@? u' F= ' F' C@ @ D ' G= ' 1AC>@E' = ' F@' IA AJ ' A1' =' @C = ?' = A ? ';' DA?' AIZ@ A?' =<@?' F= ' F@' = A ? ' @ 1' FA E' F=B@' I@@?' @ ' 1AC F' ?' ACE@C' A' J =<@' ' =DD@=C' F= ' F@' C@ @ D % = ' = @E% G= ' =' C@ @ D ' 1AC' J A?@ % = ' F@' Z E>@ ' F@ E' F= ' F@' ?E J @? ' G= ' 11 @? % =?E' F= ' F@' = A ? ' G= ' A? ' @B E@? @' A' J =<@' A ' F@' F=C>@' = ' = @E' ?' F@' ?E T J @? ' 1' 3' ' ' AI @CB@E' DA?' F ' = @' F= ' I ' F@' B@C ' @C J ' A1' F@' GC ?>' @ 1% ' D CDAC @E' A' I@' =' C@ @ D ' 1AC' A J @ F ?>% FA >F' ?A ' D@ 1 = ' 1AC' J A?@ % = ' ' G= ' =B@CC@E' A' I@% ?' ACE@C' A' IC ?>' ' G F ?' F@' -' @A ' -% ' -8 ' 183

"&B' +(4/(S' 1+=/ ' G' +=4 ' ' ' 1' .N' =' ID' "' NYM' ' "' YIH' 79/(/' 49/' =' YY' "' NEA 1! 3' /) ' , ' +=4*/ ' ' ' ' HYE W 1B' < ' 4/(S' 1+=/ ' G' /+1* ' YGI ' G +=4 ' ' ' 1' .N' =' HY' "' NGE' +' :' =' AH' "' NDD' //' /V' &' +(42' ' ' ' ' ' ' ** ' ' /V' (' +(4 ' ' ' ' ' ' ' ' IEH' 5B' /=4 10S' 1+=/ ' G' +=4' ' ' 1' .N' =' HY' "' NGA' .' +=4' ' .E. ' ' 24/' WX. B' G' +=4' ' ' 1' .N' =' YH' "' NDD' ' :' 49/' */+(' / :' 7 (4/(' (/&/(' 42' +#*2(S' 1+=/ ' .' /+19' G.A' G' +=4' ' ' 1' .N

' "(=2 ' /(' 7 +' ' : 14/ :' &2(' &2() ')' +' (/P 1/ "4 &2(GMD' :</' <"2 ' +' 3 ** 2& /V19+ ')/' ' '49/=/' 72(:=' 0 /1/ J/ :' ' *=2 ' ' ?$ +' :' 49/' ' : 14 ; / '4 =/4 &2(49' 49/' 9 ** &2(GMD ' +' :' +J/((/ :' 49/' &2() ')' 2& +' (/1/ "4 &2(' 49/' =+ :' =< ; ' 2& GMD ' 3<4 12 '4+ ' / :' '2 +J/(; / '4 49+4' 49/' 7 (4 ')' &2()/ :' 42P) /49/(' 7 49' 49/' 9 ** ' "<("2(4/ :' 42' 9/ ' 2(+=' +' (/1/ "4? +' :' 9/' 23=/(J/=' 49+4' 9/(/' +*=2' 49/' &2()/ :' 7 (4 ')' ' 4=/*&"<("2(4/ :' 42' 3/' +' (/1/ "4 &2(' =2 ; /49 ')

F@ DC A?@C G= ?E @E 1AC 1AC> ?> =?E @C ?> 7= @C = ?
G =CC=? 1AC F@ D= J @? A1 JA?@ A G 1AC F@ D= J @? A1 F@
J A1 b = H =?E F@C@ G@C@ ?A DC@1= AC = @>= A? AC
?? @?EA F@ DC A?@C G= = F J ?@ G@@D@C =?E F=E A?
@B@C= A = A? I@@?@JD A @E A G@@D F@1 ??@ A1 F@ @= J
B@ @ 5C ? @ 3 AC = =?E F@ A C @A1 I ?@ G= 1AC F@ DC T
A?@C GF@?@ F@ F=E RG@D F@ 1 ??@ A I C ?> ?F I A
" FA A?= F@ @?> ?@@C A1 F@ B@ @ GFA DA?@ F= >=B@ F J =
@C 1 = @ F= F@ GAC<@ F=E I@@?@ EA?@ =?E A?F DC@ @? ?> F=
@C 1 = @ = F@ A ? ?> FA @A1 * @ C >F =?E JA? F@
G= D= E F@ =JA ? F@ DC A?@C DC@ @? @ F@ 1A AG ?> 1AC>@E
EA J@? = F@ C A ? ?> FA @

4 7 9

7 F A = 1 F= ((A>@C F= G@D F@ 1 @ =?E @=?@E
F@ I >@ =?E C@D= C@E 1A C IC E>@ A1 F@ 5C ? @ 3 AC =

7 #+

7 i : H

5=C<@ 7 F ?< F= F@ GC @?@B E@? @ =?E F@ D=CA @ T
JA? =<@?@ A>@ F@C F@G F= F@ D=D@C 1 >@? ?@ GA E F=B@
= FAC K@E F@ D= J@? A1 F@ J J@? A?@E ?E@C F@
A E =G =B@CJ@? GA E F=B@ I@@?@ ?@ @ =C A F@GF F= F
G= =G=CC=? 1AC F@ D= J@? A1 JA?@ ; I = F@ =G = DC@T
@? ?A F =B@CJ@? =C@?@ @ =C 1 F@ ?E J@? 1C=J@E
A? F@ - , & : - ? F@ DC@ @? = @ =DD@=C
I F@ @B E@? @ GF F F= I@@?> @? F= F N 1>@? ?@d G= =
BA F@C 1AC F@ D= J@? A1 F J A?@ 1 E@ C I@ F@ ?T
C J@? ?F@ E@ C D A?> B@?A1 I F@ ?E J@? ĦN=d
- : , -8 3 @ 9 : : 7 F= I@ 11 @? ?= ? ?T
E J@? 1AC 1AC> ?> 6 "! 2(@C ?> A11@C ?> E DA ?> A1 AC
D ?> A11 =? ? C J@? GF= A@B@C 4< " ! <6 : 6" '
4 6 2 6 ! 4 # *"6>#' A = @> @ F= F@ D=C = @E E E
F@ = G F ? @? A E@1C= E G FA = @> ?> =?' ? @? A
E@1C= E =? D=C =C D@C A?; =?E A?' F@ C = A1 =? F A11@? @
F= ?A I@ ?@ @ =C A DCAB@ =?' ? @? A E@1C= E =? D=C T
=C D@C A? I F= I@ 11 @? A DCAB@ F= F@ D=C
= @E E E F@ = F=C>@E G F =?' ? @? A E@1C= E ĦNFd
& @ F=B@ = C@=E A? E@C@E F@ D CDA @ A1 1C= E =?E E@ @ A
F@ DC@Z E @ A1 =?A F@CH C >F GF F J =<@ =D=C A1 F@ E@1 ? T
A? A1 1AC>@C N d F D CDA @ AC ? @? A E@1C= E J 1AC J@C
F=B@ I@@?' = @E ?' F@ ?E J@? = =?E DA ? @E = F@ D=C =C
D@C A? AC D@C A? =>= ? GFA J G = J@E = @E NEd
? = ?> F ? @? A E@1C= E G= FAG@B@C 11 @?

'43'4 42 : /'
&(+<:' "+(4 P
1<*+("/(=2 '=
'/ - : '2 9/
+**/)/ : "(
"(2J/ :

&49/ =4+4/P
; / '4 2 49/
4/ '4 42 : /P
&(+<:

163 /) , ' 2)/(= N + : 2=+ 'T</4 / /V
1/ Y YHI /
YNA '24/ R#B
9 = 1*+<=/ = 4+0/ '&(2 ; 49/ .I
=' /4 1 .MM =' E
9/ "+==+)/ ' 4+* 1= 7+= '=/(4/ :' 42
"(/J/ '4 4= 3/ ')= =<""2=/ : 49+4 49 =
3

1*+<=/ ; +: / 4 '/1/==+(# 42 +**/)/ +' 'P
4/ '4 42 : /&(+<: '' 1+=/= 79/((/ 49/ 1*+<=/
1(/+4 ')' 49/ '&&/ '1/ : : '' 24 ; +0/ =<19 +'
'4/ '4 +' ')(/ : / '4 ' 49/ 2&&/ '1/
! !
W1 J : "' YDE O
R G +=4 ' 1 .N = AE ' ' NEE

A E@ C I@ F@ D=C ? @?E@E A I@ E@1C= E@E G F C@= A?=I @ @C = ? N@d

4 2 '24 '/P 1/==+(#42 =4+4 '49/ '': 14 (2/'4 49/ ;+''/('' 4(9 19 49/ "+(4# 7+ 42 9+J/ 3//'' :/&(+<:/: 42 49/ "(h "/(4# 2& 49/ "+(4# '4/':/: 42 3/ :/P &(+<:/: '' 49/ ;2'/= 1 =2<)9 42 3/ 234+ '/:

'G= 'F@ E ?A A I@ ?@ @ =C ' A = @ ?' F@ ?E J@?' F@ J =??@C ?' GF F F@ D=C 'G= ' A F=B@ I@@?' E@1C= E@E 'NMd

F@ 1A AG ?>' = @ C@ = @ ' A F@ DCAD@C 'A1' F@ D=C '=>= ? ' GFAJ' F@ ? @? ' A E@1C= E ^= J@E ?' F@ JA? @ , A >F ' A I@ AI = ?@E I ' F@ 1AC>@C '

A?@ '=?E 5= J @C G@C@ ?E @E 1AC F@ 1AC>@C 'A1' =?' ?E@? C@ A1 =DDC@? @ F D =?E = A A1 =' C@ @ D 'AC JA?@ G F ? @? ' A E@1C= E ' , < 56"# '4*' < ' * 6 '4*' < ' 4 '4*' < ' "2' ' F@ bF=C =I @ 1 ?E A1' F@ A? ' A1' F@ @C> ' G= ' C= @E I ' BA ? =C ' 1 A? C I A? =?E' = A @E' I ' F@ @ @ =C ' @b = '=JA?>'= ' F@ @G=CE A' I@' E DA @E' A1' I ' F@ J' A' F@ G EAG '=?E' F EC@?' A1' E@ @= @E' @C> J@? = ACE ?>' A' F@ C E C@ A?;' F@ DC A?@C A?@ ' G= ' =' @C> J=?H' G EAG =?E' DC@ @?E ?>' I ' J @=? ' A1' F@ ?E@? C@ ' ?' b @ A?' =?E' F@ C@ @ D ' ?EAC @E' F@C@A?' F= ' F@ F=E' D = @E' F@C A?' = ' =?' =D!' DC@? @' F@ AI = ?@E' ?' A? @C 'G6F F@ A F@C DC A?@C' =?' ACE@C 1CA J' A?@' A1' F@ @G=CE A?' F@ C@= C@C A1' F@ A @ 1AC - _ = ' =?' =DDC@? @ 1@@ ' F@ DC A?@C ' F=B ?>' I@@?' 1A ?E' > ' G= ' I J @E' F= ' F@ A11@? @' =JA ? @E' A? ' A' =' J E@J@=?AC = ' AJ JA?' =G =?E' F= ' F 'G= ' ?A ' F' =' D@ @ ' A1' DCAD@C ' = ' 1@ 'G F ?' =? ' A1' F@ ' C@ = ?>' A' 1AC>@C ' ' C@ = E F= ' F@ @B@C=' @G=CE 'G@C@ F@' =I A @' AG?@C 'A1' F@ C C@ D@ B@ F=C@ 'A1' F@ 1D?E ; F= ' 'G= '' F@ C' JA?@ D ' ? A' F@ C' F=?E ' DA?' =' C ; =?E' 1' F@ 'F=E' ?<' ' J DCAD@C AC' D= E' 'GCA?>1 F@ 'GA E' D@CF=D ' I@' =? G@C=I @' ; =?E' F= ' ?b @ A?=I ' ' G= ' F@ C' JA?@ = ' =>= ? ' = ' F@' GAC E @] @D ' F@' I C I@C N>d

+(=9 2 '/(= & F@C@' F@' DC A?@C' G= ' ?E @E' 1AC 1AC> ?>' =' C@ @ D ' 1AC' A ? 'C= @' ; GF F' F=E' I@@?' D= E' A 'A1' F@' DAAC' C= @' A1' =' D=C F' 'G= 'F@ E' F= ' =' A ?' = ?>' F@' ? @? ' A' I@' A' E@1C= E' A?@' A1' F@' D=C F A?@C ' I ' ?= J @' 7=?E' E F@ H G= '>AAE ' I3

/=1(3 ')' 2&&/ '1/ '' 49/' 72(:2& 49/' =4+4<4/

1' F@' ?E J@?' DCA @@E ' DA?' ; = @' F@' F=C>@' FA E' ?' >@?@C= I@' @ '1AC F' N= ACE ?>' A' F@' @ =I F@E' C @' =DD =I @' = ' G@ ' A' A F@C' = @ ' = ' A' 1AC>@C d ?' F@' B@C ' GACE ' A1' F@' = @' E@ C I ?>' F@' A11@? @' N d

' =?' ?E J@?' 1AC' 1AC> ?>' =' =JD' A?' 1AC@ >?' J ? YGF F' = @E' F@' E ' A' I@' F=C>@=I @'*4"'4 '6 #'! '" E '4*' 1AC@ >?' J ?' G= 'FA E@?' >AAEG FA >F' F@' GACE 'A1' F@' = @' ?' F@' = @' JDA ?>' F@' E 'G@C@' *4"' 6 #'>E4 G ?' A F@C' = @' *4"'G ?' A F@C ' 4 G =?E' ?' A F@C '>E4 '1C3

?' ?E J@?' A?' F@' -' @A' -' -8' GF F' F=C>@E' F=' F@' DC A?@C' 7E E' 1@ A? A '6 "' =?E' = @' A' I@' = @C@E' =' @C = ?' I 'A1' @] F=?>@' <''*6 ''&6 ! 2 *4"2! 2 '6 #'6##! 2' =' DF@C

W]b 2J/**S 1+=/' .' /+19'GIE' G +=4 ' '1' .N' =' YM' "' NNM

Wwb' .27/**S 1+=/' G +=4' ' '1' .N' =' AN' "' NEN' .' /+19' DD' *=72(&19S 1+=/' G +=4' ' M' 1' .N' =' AN' "' NEN' +' :' =' AE' "' NEY

Whb /V' ' 2' /=' .' /+19' HYY' G +=4 ' ' M' .N' =' YM' "' NN.

W[b /)' ' +<)9+' ' E' ' ' ' GDY' ' AEY S //' /)' &' 220/' E' '

W b' G +=4' ' ' 1' .N' =' AE' "' NEA "*B' /V' ' +**' G +=4' ' ' 1' .N' =' .N' "' ENA' +' :' =' AE' "' NEE' ' 9+"' 8 '^ 3 3' 4 ' K' +' :' +'' ' : 14 ; /'4 +4 /2 ; ; 2'' *+7 7+ 92*: /' K3+:' &2(< '1/(4+ '4#' 79 19 =4+4/ :' 49+4 49/ :/&/' :+'4 &2()/ : ' 2(1+<=/ :' 42 3/ &2()/ :' +' 3 ** 2& *+ : ') ' /V &' 4210/(' A 2: ' .HD' .' +*O' HIG' HD.' ? +' :' =/ +*224S 1+=/' 2*4S ' HIA

=DD@=C@E = * FA == F=E =E@DA = A ? G F * @ C & < ? I=?<F ?A =EC=G ?> = A ? =?E F= F@ A C @ A1 E@= ?>G= ?A A D= F@b @ @B@?1 @?E@C@E I F@E@DAT AC F J @ 1 ? @ F@E@DA C@ @ D G= D !AE @E ;=?E ? F = @ F@E@DA C@ @ D G= ?A DCAE @E I F@DC A?@C I F@ I=?<@C = F@E F@ ? C J @? D'ACE@C A= AJ JAE= @ * FAJ= =?E I@ = @ F@ DC A?@C G= = AJD=? @E I =D@C A?G@ <?AG?A F@ I=?<@C GFA >?@E F@C ?=J@ = > =C=? @@A? F@ ? C J @? & >F J =? F@ E F= F@ ? C J @? G= =G=CC=? I ?A =?E ACE@C; I@ = @ =DD@=C@E 1CAJ F@ ?= C@ A1 F@ A? C= I@ G@@? FAJ = =?E F@ I=?<@C F= F@ I=?<@C G@C@ ?A IA ?E A A @ = FA >F ?' DA ? A1 1= F@ E AI@ =?E = G= E@ C I@E ?' F@ ?E J @? = IA F' =G=CC=? =?E ACE@C F@ B=C =? @ G= 1= = N d A GF@C@ =?' ?E J @? F=C>@E F@ 1AC>@C A1 =G=CC=? =?E ACE@C 1AC F@ D= J @? A1 JA?@ GF F G= =1A AG

> F 9:9 %

@? @J@?` EA F@C@I = FAC K@ F@ I@=C@C A1 F ?A @ A EC=G F@ JA?@ F= A ?AG FA E I@ A?> ?> A J@

G K (& 0

E@C A? =1 @C A? ?> A @C E>@ F@ E F@ ?E J @? I=E I@ = @ F@ ? C J @? @ A G= =G=CC=? =?E ?A =?' ACE@C 1>3

i 9/(f &2()/: '=4(+ ; / '4=/4 2<4 "+" : 14P ; / '4 =: /P =1(3/ :3# 49(//f '+ ; /=' +' :2'f '+ ; f 2'*#4<('=2<4 42 3/f +"'"*6 1+3*/f42 4 49/ 249/(=+(f ; P ; +4/(+*

GF@C@ F@ ?E J @? F= >@E F@ DC A?@C ? E 11@C@? A ? G F 1AC> ?> =?E @C ?> 1= @C = ?' G=CC=? =?E ACE@C =?E C@b @ 1AC F@ E@ B@C A1 >AAE GF F = E 1AC>@E G=CC=? ACE@CZ =?E C@b @ ? ?' F@ GACE , 1A AG ?>

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A E &= ?' F@ F=I A1 I ?> CA?JA?>@C 1CAJ @B=?=?E F=E 1AC AJ@ J @ @JD A @E F@ DC A?@C A @ >AAE 1AC F J A?' AJ J A?' F@ DC A?@C DC@ @? @E A @B=?=D=D@C ?' F@ @C J @ A ?' F@ ?E J @? GF F G= DCAB@E A' I@ =1AC>@C A1 A EH" F=?EGC ?> &= AIZ@ @E F= F@ EA J @? G= ?@ F@C =R!=CC=? ?AC =?ACE@C I A? =C@b @ 1AC >AAE ;=?E F= ?ACE@C A = 1 F@ ?E J @? J I@=CC=? =?E %ACE@C = G@ = = =C@b @ - 2 B !)!6"& 1 3 F@ DC A?@C G= A?B @E A1 @C ?>=?E A?' = = @C@ @CB@E F@Z E>@ F@ E F= = F@ ? C J @? G= @ A J < 4 "<6 F@ A?B A?' G= C >F NJd

9f '=/(4 2'' 2& =<"/(&*<2<= GACE EA@ ?A' J 4 +4/f 49/f ' : 14 ; / '4' /7 ')' 2& '24/= 2" +'" ' : 14P ; / '4

F@ ? @C A?A1 D@C1 A GACE GF F G@ !@?A A? = ?@E ? & :F E E?A B = @ F@ ?E J @? "0B
@G ?> A F@ D=C FJ @? A?GF F F@ ?E J @? JDC@ A? A1 1AC>@E ?A @ =<@?1CAJ @?>C=B@E D = @ ?A =11 @? @ ?> A A1 F@ ?A @ ?' F@ ?E J @? 1'3

& b /) ' . ** + ; =' G ' ' A. +' :1+=f42)/49/(' 9f 6<:)/=/'4 &2(" B /) ' e V2' H 2V' ' GEN +12"# 2&49/f ' : 14 ; / '4 3/&2(f : /1 : ') W]b N RNB /) ' : ** + ; =' G /' ' Y. W# ' /V +(=9+' /(' ' ' HYH =/+=f =4+4/ :'&(2 ; 49/f ' : 14 ; / '4 ')((' G IGH +' :' IGN

=CC= >? %‘ GFA‘ C@D @E‘ A‘ ’ A?‘ F@‘ D=C ’ A1‘ F@‘ CAG?%‘ > ’ ! ’ " 4"# ’ ?’ ACE@C‘ A’ DCAB@‘ F@‘ D @=%‘ F@‘C@ ACE‘ A1‘=‘1AC J @C‘= b = ’ A1‘ F@‘ DC A?@C‘ G= ’ DCAE @E;‘ I %‘ A?’ A J D=C ?>‘ ’G F‘ F@‘ DC@T @? ’ ?E J @? %‘ ’=DD@=C@E‘ F= ’ F@‘ DC A?@C‘ F=E‘ I @@?‘= b @E‘ A1‘ @C ?>‘=‘1AC>@E‘ G %‘ I @> ?? ?>‘T ’D6& ’Y!: 4 ’EA‘F@C@I %H , %‘ I ’ F= ’F@‘ G= ’?AG‘ ?E @E‘1AC‘ @C ?>’=‘1AC>@E‘G %‘ I@> ?T ? ?>‘TD6& ’Y!: 4 ’EA‘F@C@I %H , ’ F@‘b @ A Z‘ F@C@1AC@%‘G= ’ GF@ F@C‘ F ’C@ ACE‘ G= ’ @>= ’ @B E@? @‘ A1‘ F@‘ DC A?@C‘ F=B ?>‘ I@@?‘= b @E‘A1‘ F@‘ 6& ’4** ’(! ?E%‘=1 @C‘=C> J @? ’I ’F@‘ DC A?@CH’ A ? @ %‘ F@‘ A C ’C@Z@ @E‘ F@‘DCAA1‘= ’ ? 11 @? ’, F@‘ DC A?@C‘ D @=E@E‘! @‘ >@?@C= ’ @‘ A‘ F@‘ 1@ A? %‘ =?E‘ F@‘Z C ’ 1A ?E‘F J‘> ’A1‘ F@‘A11@? @%‘N@d’

F@‘ A11@? @‘A1‘1AC>@C ’= ’ AJ J A?’ =G’ =??A ’I@‘ C @E‘= ’ F@‘ b =C @C‘ @ A? %‘ F= ’ A C ’F=B ?>‘?A‘Z C E A?’AB@C‘ ;‘?AC‘ =?‘ F@ ’ =<@‘ A>? K=? @‘A1‘ ’= ’=‘ F@= ’NMd’ ?E‘ F@‘ b =C @C‘ @ T A? ’ F=B@‘ ?A‘Z C E A?’ ?’ = @ ’ A1‘1AC>@C ’ DA?’ F@‘8‘ K’ ’ :’723‘ (* ’ Y

F@‘ C = ’ A1‘1AC>@C ’ J ’1AC J @C ’ F=B@‘ I@@?‘ ?’ F@‘ A ? ’ GF@C@‘ F@‘A11@? @‘G= ’ AJ J @E%‘= ’ F@‘ ?E J @? ’ A E‘A? ’I@‘ DC@1@CC@E‘ ?’ F= ’ A ? ’ ?E’ = ’ ’ @EAJ’F=DD@?@E‘ F= ’E C@ ’ DCAA1‘ A E‘ I@’> B@?’A1‘ F@‘ B@C ’= ’A1‘*4"2 "’ ’E 11 @ ’ AJ@T J @ ’A CC@E‘ ?’ = @ ’GF@C@‘ F@C@‘F=E‘ I@@?’?A‘A11@? @‘A1‘ @C ?>‘ I ’F@‘ DC A?@C%‘= ’ A‘ GF= ’G= ’ 11 @?’ @B E@? @‘A1‘ F@‘1= ’A1‘ 1AC> ?>‘G F ?’ F@‘ A ? ’ = E ’ ’?AG%‘= ’ = C@=E ’J @? A?@E%‘ I ’ F@‘ -:‘ ,’ -8‘) ’ ’ 9%‘ ’ : %‘ F@‘ A11@?E@C‘ ’ C =I @’ 7 ?’ =? ’ A ? ’AC‘D = @‘ ?’GF F‘F@‘ F= ’I@‘ =DDC@F@?E@E‘AC‘ I@‘ ?’ AE H

GA‘ DC A?@C ’G@C@‘ ?E @E%‘ F@‘ A?@%‘5=C<@ %‘1AC‘1AC> ?>%‘ F@‘ A F@C ’ CAG?%‘1AC‘ @C ?>’=‘1AC>@E‘DCAJ AC ’?A @’1AC‘1 B@’> ?@= ’ ’=DD@=C@E‘ @=C ’ F= ’5=C<@ ’F=E‘1AC>@E‘ F@’?A @;‘ I ’F@‘A? ’ @B E@? @‘A11@C@E‘ A‘ F@G‘ F= ’ F@‘1AC>@C ’ ’= ’ AJ J @E‘ ?’ * ET E @ @]%‘GF@C@‘ F@‘B@? @‘ G= ’ = E%‘G= ’ F= ’ CAG?%‘I@ G@@?’GFAC?’ =?E‘5=C<@ ’F@C@‘G= ’=‘ >C@= ’ ? J = Z’’F=E‘ @C@E‘ ’ ?’ * EE @ @]%‘ ?’ F@‘=I @? @‘A1‘5=C<@ %‘GFA‘G= ’?A ’DCAB@E‘ A‘F=B@‘I@@?’ A>T ? K=? ’A1%‘ F@‘1= %‘=?E‘ F= ’ =IAB@‘1AC ’A1‘ F@‘ =J@‘ AC ’A1‘1B@’ > ?@=’ ?A @ ’ ?’ I =?<%‘G FA ’=? ’ >?= C@%‘ G@C@‘ 1A ?E‘ DA?’ 5=C<@ %‘ ?’ F@‘ =J@‘ A ? %‘A>@ F@C‘G F‘=’C@ @D %‘ ?E@C‘ AB@C%‘ =EEC@ @E‘ A‘ CAG?%‘1AC‘ @ ’1AC‘1A C‘1 B@ > ?@=’ I ’ ’ F@‘ ?A @ ’1A ?E‘ DA?’5=C<@ %‘= ’G@ ’= ’ F= ’ DA?’GF F‘F@%‘?E J@?’ DCA @@E@E%‘ G@C@‘ E= @E‘7 (?>F A?%‘ = AD H A F’ F@‘ DC A?@C

(+# 2&&2()/(#‘ 9/‘ T<+(4/(‘ =/== 2’/‘9+(/‘ ’2‘6<(=: 14 2’

(+# 79/((/‘ 49/‘ 2&/’ I/‘ =‘ 12 ; ; 44/ : ’2(+‘ "(=2’/(‘ +""(/9/’ ’ :/ :‘ 2(’’ 1<=42 : #

9/‘9+(/‘&+14‘ 2&+‘&2()/ :‘ ’24/‘3/ ’)‘ <44/(/ :‘ ’‘+‘ "+(4 /<‘9(‘ 12<’4# 3# 2’/‘ "(=2’/(‘ =‘ ’ ’ /J :/’1/‘2&49/‘ &2()/(# 9+J ’)‘ 3/ /’’ 12 ; P ; 44/ :‘ ’’49+4‘ 12<’4# 3# +’249/(‘ "(=2’/(‘ 492<)9‘c’’ +1/2 ; "* 1/‘2& 49/‘<44/(/(

W/ 22)+’S‘ 1+=/’ M’ ’ .DED’ .’ +<VS‘1+=/‘WG‘ +*/’GIYb‘+=‘(/"2(4/ :‘3# /+19’IIE‘ 2‘ ’’ /+: ’)S‘1+=/’ .’ 2(:‘ 20/’ I‘ 2‘ II’ H‘% ’ C)’ "’YNE’ ’24/‘"0B.‘ < /(‘ ’=+ :‘ 49+4‘49~’’ //‘J2 ’C.’ ’)1 6<:) ; /’4‘ 3/ ’)‘ +’J=4/ :‘ &2(‘49/’ ’&2(P " B‘ + ; ’)42’S=‘1+=/’ .’ +*O‘ IMY’ ; +* 4# 2&49/‘(/12(: ’ 49/’"(=2’/(‘ ;)94‘ /V , ’ ! 33=’ ’ +=4’ ’ .DH‘ G‘ +=4’ 3/‘ +)+ ’’ ’ : 14/ :‘ &2(‘49/‘2&&/’1/ ’ ’:’ ’M’1’.N’=’D’"’EYI’’G +7O‘ ’ ’ ’’ ! *19(=4S‘1+=/’ ’"’’YNN’ +=‘ 49/‘ 1’E’=’YI 236/14 2’’4+0/’’ 7/’4 2’*# 42‘49/‘&2(;‘2& 3& ; 49S‘1+=/’ (2’ *a’ED’ *P 49/‘ ’ : 14 ; /’4‘+’ :‘ ’24 42‘49/‘ ; /(4= 2& =2’S‘ +=/’ :’YM.’ <’4S‘/+=/’ :’YND’ 49/‘1+=/’49/‘"(=2’/(‘7+=‘ (/ ; +’ :/ :‘ 42‘ /‘49/‘A‘ ’Y‘ /4’1’HE’ J 0’ "(=2’’4 *# 49/‘ /’ :‘ 2& 49/‘ =/== 2’=’ 49+4‘ /V , ’ - ’=’G‘ +=4’ ’.E‘ &’49/(/P 49/‘ "(2=/1<42(‘ ;)94‘ 9/‘ +4‘ *3/(4# 42‘ &2(‘ &2()/(# 3/‘ &2<’ :‘ "(/&/(‘ + 3/44/(‘ ’ : 14 ; /’4‘ +)+ ’=4‘ 9 ;’ +4‘ 49/‘ /== 2’=’ +’ :‘ 4(+’= ; 44/ :‘ 42‘49/‘ &’9/‘ 492<)94‘&4’ ’’ 49/‘+32J/’1+=/‘ 2& == a/=’ 49/‘6<:)/‘ 7 ** 2(:/(‘ 4‘ 42‘ 3/‘ 22)+’’49/’"(=2’/(S‘12<’=/# 19 /&*# (/P T<+=9/: ’ /) ’ &’)3#’ E ’ ’ ’ * / :’<"2’’ 2(:’ +*/S‘ 12’=4(<14 2’’ 2& DDM’ (=0 ’/’

F=B ?>' I @@?' A?B @E% F@' = @' G= ' C@1@CC@E' A' F@' A? E@C= A?' A1' F@' G@ B@' Z E>@ ' AJ@' A1' F@' Z E>@ ' G@C@' A1' AD ? A?% F= ' F@' 1= ' A1' 1 ?E ?>' F@' 1AC>@E' ? C J @?' ?' F@' A ? %' ?' GF F' = A' '=DD@=C@E' F= ' F@' 1AC>@C' F J @ 1' G= % G= ' @B E@? @% ?' F@' =I @? @' A1' A F@C' DCAA1% A1' F@' 1= ' A1' F@' 1A >@C ' F=B ?>' I@@?' @C@' AJJ @E ' ' F@' J=ZAC ' A1 F@J % FA >F' F@ '=>C@@E' F= ' ' G= '=' b @ A?' A1' @L E@? @U1AC' F@' Z C % G@C@' A1' AD ? A?' F= ' F@C@' G= ' ?A' DCAA1' A' G=CC=? ' F@' A? A?' F= ' F@' 1AC>@C ' G= ' AJT J @E' I '5=C<@ % ?' * EE @ @]% GF@C@' 'G= ' = E' ; 1AC' F@ ' FA >F ' F= ' F@' I=C@' 1= ' A1' F@' ?A @' I@ ?>' @C@E' ?' * EE @ @]' I ' F@' A F@C' DC A?@C% =< ?>' F J ' @B@?' A' F@' =?' = AJD @% G= ' =A' @B E@? @' A1' F@' 1AC>@C ' @ 1' F=B ?>' I@ ?Hn' AJJ @E' ?' F= ' A ? ' N d

' ?'=' JAC@' C@ @?' = @' ' 'C@DAC @E% = ' F@' AD ? A?' A1'=' J=ZAC ' A1' F@' Z E>@ % F= ' F@' 1 ?E ?>'=' 1AC>@E' ? C J@?' ?' F@' AE ' A1'=' D@C A?' '?A' @B E@? @' F= ' 'G= '1AC>@E' ?' F@' A ? 'GF@C@' ' G= ' 1A ?E% N d

& F@C@'=?' ?E J@?' = @ *' F@' 1AC>@C ' A' F=B@' I@@?' AJJ @E' ?' F@' A ? ' A1' " A ?>F=J % =?E' ' G= ' DCAB@E' A' F=B@' I@@?' AJJ @E' ?' F@' A ? ' A1' F@' AG?' A1' " A ?>F=J % 'G= ' FA E@?' F= % = FA >F' ?E@C' F@' 9' @A' % ' 8-% ' G= ' C =I @' ?' F@' A ? '= ' =C>@% F@' A11@? @' FA E' F=B@' I@@?' = E' ?' F@' A ? ' A1' F@' AG?% 1<3

& F@C@' F@' DC A?@C' F=E' I@@?' A?B @E' = ' F@' = K@ ' 1AC' F@' IACA >F' A1' @ @ @C' J 1' 1AC> ?>'=' I ' A1'@] F=?>@% =' b @ A?' G=' C= @E' GF@ F@C' F@' @B E@? @' A1' 1AC>@C ' ?' @ @ @C' G= ' 11 @?' A' = ?' F@' B@CE ' F@' I 'G= ' E= @E' = ' @ @ @C% ?@' % 9-.% =?E' D CDAC @E' A' I@' EC=G?' =?E' ?EAC @E' I ' EE A?% A' F ' AG?' ACE@C% A?' & ' =G A?% 1AC' : _ ' = ' GA' J A? F ' =1 @C' E= @% =?E' A' I@' ?EAC @E' I ' EE A?' EE A?' =?E' (=G A?' IA F' B@E' = ' @ @ @C% =?E' EE A?' <@D ' = F' G F' = <' =?E' A% = ' F= ' D = @' F@' I 'G= ' =<@?' A?' F@' 8 F' A1' ?@' I 'A?@' 5AC @C' A' F@' I=?<' A1' =C<' =?E' A% G F' =' C@b @ ' F= ' F@ 'GA E' E A ?' 'Z I % F@' 1AC>@ ' I@ ?>' HE AB@C@E' 5AC @C' G= ' E@ = ?@E% =?E' C @E% =?E' A?B @E' = ' F@' =J@' = K@ '1AC' @C ?>' F@' I ' F@' GFA @' A1' F@' I ` F@'E= @% IAE % >?= C@% =?E' ?EAC @J@? ` G@C@' ?' F@' F=?EGC ?>' A1' F@' DC A?@C ' 'G ?@ ' DCAB@E' F= ' F@' 1= F@C' A1' F@' DC A?@C' B@E' ?' @ @ @C% =?E' F= ' F@' I@ @B@E' F@' DC A?@C' B@E' G F' F J % F=B ?>' @@?' F J ' F@C@ ' ?A F@C' G ?@ ' =G' F@' DC A?@C' =?E' 5AC @C' G= < ?>' =?E' = < ?>' A>@ F@C' ?' =' C@@ ' ?' @ @ @C% = IA '=' G@@<' I@1AC@' F@' 8 F' A1' ?@ ' ?A F@C' G ?@ ' =G' F@ J ' D= ' F@C' FA @' A>@ F@C' ?' =?A F@C' C@@ ' ?' @ @ @C% ?' F@' A C @' A1' =' 1AC ? >F ' I@1AC@' F@' 8 F' A1' ?@

9/' & ' : ')' +' &2()/ :' '24/' '' 49/' 1<=42 :# 2& +' "/(=2" =' '24 /J :/ '1/' 49+4 4' 7+=' &2()/ :' '' 49/' 12<' 4# 79/(/' 4' 7+=' &2<' :' ? /="/P 1 +**# '' +' 1+=/' 79/(/' &(2 ;' 49/' 1 (1< ; =4+ '1/=' 49/'(/' =' +' "(/P =< ; "4 2 '' 49+4 4' 7+=' &2()/ :' '' +'249/(12<' 4# &&/ '1/=' 12 ; P ; 44/ :' '' 49/' 12<' 4# 2&' +' 427 '

" B /V' , ' +(O/=' G' /+19' DDA' G +=4' ' M ' ; . N = ' IN ' "' N& ' +' : = ' Y. ' "' NNG ' *492<)9' 49/=/' 1+=/=' ; +#' 6(/(9+"=' '2' *2')/(' 3/' ; +4/(+*' '9+J/' 492<)94' 4' =+&/(42' */4' 49/ ; ' (/ ; + ' ' +=' 49/#' ; +# 5' ' 3/' &2<' :' ', <=/&<*' ' ' Y

" B (210/(S' 1+=/' G' /+19' NED' G /7' /" ' ED' <4' O ' &' 49/' 2 ' *# "2 '4' +14<+**#' :/1 :/ :' 3# 49/' 6<:)/=' '' 49 =' 1+=/' 7+=' '24' 049+4' + ' '' '12 ; "/4/ '4' 7 4P ' /==' 9+:' 3//'' +: ; 44/ :' ^$ //' Y J' 2*' 4+4' 4' ' *' V

'#B /V' , ' /**2(' ' ' ' .II ' 9/((' 49/' ' : 14 ; /'4' =' "(/&/(((/ :' '' 49/' ' /V4' +:62 ' ')' 12<' 4#' <' :/(' 49/' HE ! /2' H' 1' AG' &2(' +'' 2&&/ '1/' '' +'' '&/(2(12 ; 4#' 492<)9' 49/' ' : 14 ; /'4' ; <=4' =4+4/' 49/' 2&&/ '1/' 42' 9+J/' 3// '' 12 ; ; 44/ :' '' 49/' '&/(2(12<' 4#' 4' '//:' '24' +J/(' 49+4' 49/' 12<' 4#' '' 79 19' 49/' ' : 14 ; /'4' =' "(/&/(((/ :' =' 49/' ' /V4' +:62 ' ')' 12<' 4#' <4' 4' ; +#' 3/' =4+4/ :' '' 49/' 1+"4 2' ' 79/ '' 49/' (/12(:' =' (/)<*+(*# :(+7 '' <"' /V ,' ! 2&&' ' ' ' .DN

A F@C G ?@ ' G F@J G= < ?>=?E = < ?>A>@ F@C ?=?A F@C C@@ ? ? @ @ @C%=B@C FAC J@ I@1AC@ F@ =J@ 8 F A1 ?@ ?A?@ A1 F@ G ?@ @ A E 1] F@ DC@ @ E= A GF F F@ DA<@ AC E @? @CE@?EA I @E GF@ F@C F@C@ G= F @B E@? @ A1 Fp 1AC>@C ? ? @ @ @C = GA E Z 1 F J ? @=B ?>F= DA ? A F@Z C ; I F@ @1 A F@J %=?E F@ DC A?@C I@ ?> 1A ?E> % F@ DA ? G= I J @E A F@Z E>@ % GFA F@ E F@ A?B A?C >F 1 3

F@ @B E@? @ ?1AC>@C J DDAC F@ J = @C = 1= = @E ?F@ ?E J@? $ =?E ?@ @ =C % F= F@ DCAA1 FA E = G F F@=B@ J@? A1' F@ ? @? A E@1C= E% NJd ?E G@ F=B@ @@?% F= F@ J =??@C ?GF F F@ 1C= E G= @=C?@E AC ? @?E@E A I@ =CC @E ? A @11@ ?D@ =C J = @C A1 @B E@? @ 1 3

F@ D=C GFA @ ?=J @ = @>@E A I@ 1AC>@E = AJD@ @? G ?@ I@1AC@ F@ @A :% - % F G= A F@CG @ A =D@C A?A I@ ?>? AJD@ @? = = G ?@ A?F@ >CA ?E A1 ? @C@ % @@BA % 7 B E@? @ H

F@ @ JA? A1 F@D@C ?GFA @?=J @F= I@@?1AC>@E% GF@?E ? @C@ @E% ? ?>@?@C= F@ JA = 1= AC A1=? A? F@ b @ A? A1F F=?EGC ?>% NAd

?= = @A1=DCA @ A?1AC F@*4"2 "'4*=I=?<?A @% G= C @E F= F@F=?EGC ?>A1 F@ = F @C A1 F@ I=?< J >F I@ E DCAB@E I =? D@C A? GFA G= = b = ? @E G F F F=?ET GC ?>" B

DA?=? ?E J@? 1AC @C ?>=1AC>@E F@b @D CDAC ?> A I@ EC=G?I * C 5=C F% @B E@? @ G= > B@?A1 B=C A 1= @?E ?> A F@G F= F@DC A?@C @C@E F@ F@b @& F=> <?AG @E>@ F= G= =1AC>@C % =?E F@ F=?EGC ?> A1 * C 5=C F G= E DCAB@E I F@ @B E@? @; I F@ G= ?A = @E% FA >F= B@=?E G F ?F@C@= F A1= IDA@?=; G= A? @?E@E F= * C 5=C F A >F A F=B@ I@@? = @E A ?@>= B@ F=B ?> > B@?F@ DC A?@C AC AJ@ A?@ @ @ = FAC A I C I@ F@ F@b @ ?F@C ?=J@ C@ G@ % 7 J ?> F@ F@b @ A I@ 1AC>@E% F@C@ @B E@? @% 1CAJ F@ DC A?@CH A?E % A F@G > <?AG @E>@; =?E I@ ?>DCAB@E ?A A I@ ?* C 5=C FH F=?EGC ?>% F@ =J@ 1= J = I@ @E A @G F= * C 5=C F E E?A = FAC K@ F@ @ A1F@C ?=J@% =?E F= F@ DC A?@C G= =G=C@ A1 F= 1= H "OB

DA? F IZ@ =?= I @ GC @C DA? F@ =G A1 @B E@? @ AI @CB@ % F= F@ @B E@? @ A1 D@C A? G@ = b = ? @E G F F@ F=C= @C A1 F@ DDA @E GC @C A1=? ? C J @? % 1AC F@ D CDA @ A1 DCAB ?> AC E DCAB ?> F@ F=?EGC ?>% ?A ? ?= C@ ?T 1@C AC AC @ A?E=C % " B

" B /V ' 2(+9 / 1/=4/(< ; = .EGD .EGD

" B J :"DMA <4 3# GI GA U /4 M NE =I II 4 =12 '/1/==+(# 42 "(2J/ +' '4/'4 42 :/&(+<:+'#"+(4 1<*+(/(=2'? 4 =<&& 1/'4 42 "(2J/ 49+4 49/ "+(4# +11<=/: : :49/ +14 19+()/:7 49 +' '4/'4 42 :/&(+<; // :"DMA

" B J :"DMY O

" B G +=4 ' 1 .N =YY "NNN ; 49S 1+=/ ! 2<*: :+' :+4/= # G +=4 ' 1 .N =YD "MMM WXb <)9/=S 1+=/ ' *+'1 G +=4 ' '1 .N =YE "MMG ' : =/ 27'/=S 1+=/ :"DGA 79/(+ &+49/(7+= +: ; 44/:42 :="(2J/ 49/ 9+':7(4 ')2& 9 =2'792 7+= +4 +;+1+ ':+=42'49/ +'O2& ')*+':1+=/=' 4 7+= 92*:/' '+1+=/ (=/(J/: 49+4 4 =12 '/1/==+(# 49+4 49/ =)'')1*/(O=92'*:3/"(2:<1/:' &7 4'/==/=+1P T<+ '4/:7 49 9=9+':7(4 ')=4+4/ 49+4 49/=)'+4<(/ 42'49/ '24/ =12 9=9+':P 7(4 ') EDE ! <(/S 1+=/ G +=4 ' 1 .N =YE "MMG WW/ /) <(*/#' G 23 IDH R B 9*2' J :'GGH D49 /:4

9+4 =<&& 1 / '4 /J : / '1/ &2() ') +3 2& /V1 + ')/

F@ DC A?@C G= ? E @E1AC F= F@1F=B ?>? F1DA @ A?=
@C = ?!I A1@] F=?>@1AC>@E F@1A AG ?>= @D =? @A?1 $ `

7 @D @E1 D= =I @ = C AF? IIA <1 =C 1 =?E AH1
I=?<@C 1 A?EA? H

F@ I G= EC=G?1 ?EAC @E1 =?E = @D @E I F@ DC A?@C
?I@ ?>= =<@?? A AE F@ E E ?A E@1 AC = @JD A E T
> @ F@1= ;, ?@ F@C E E F@ D@C A?= @1 AC ?= ? J =??@C F@G
=?? @? A?A D@C A?= @ =? A F@C D@C A? F@ I G= D= E
=G= A A?@A1 F@ D=C @ ?= J @E ?F@ ?E J @? 1 = ? @?E@E A
I@E1C= E@E I 1 % 'I G= ?@B@C DC@ @? @E1AC D= J @? 1 =?E
A? @b @? ?A C@1 @E " A D@C A?G= = @E A ?@>= B@ F@
= FAC A1 C AF? IIA < A F@DC A?@C A = @D F@ I 1AC
F J AC A?F 1@F= 1;, ?@ F@C G= F@C@ =? A F@C uB E@? @> B@?
A1 =? ? @? A E@1C= E C AF? IIA <1 AC =? A1 F@ D@C A?
?= J @E ?F@ A F@C A ? A1 F@ ?E J @? @E= @1
FA >F F@ A ? @1AC F@DCA @ A?F=E @1 F@ = @ FAC1 ?
?A DCAB ?>= =?= @JD A E@1C= E C AF? IIA <1 AC AJ@
A?@ D@ 1 = J @? A?@E ?F@ ?E J @? 1 =?E G= 1 C F@C A1
AD ? A?F= F@ = @D =? @1I@ ?>DCAB@E A I@ ?F@F=?EGC ?>
A1 F@DC A?@C1 G= ?A ?@ @ 1'9E"!&B*6 ! @B E@? @A1= 1AC>@C
11 @? A D F J A?I E@1@? @ 1 =1 @C AJ@E A?1
F@= AG@E F@ = @ A >A A F@Z C 1 ? J = ?>F= F@ FA E
@ @CB@ F@DA ? ?F@ F@ @B@? A1= A?B A? @ F@?A E F@
Z C F= 1 F@ FA >F F@ DC A?@C1 GF@?F@ D= E =&= F@
I 1 ? @?E@E F= F@ D=C A GFAJ F@ D= E FA E=EE F
?= J @1 G= =?? AJD @ @ = @D =? @ F= 7 1 F@ A? T
E@C@E F= F@ @C@E G F= 1C= E @? ? @? 1 J @=? ?>F= H
FA E D= = F@ = @D =? @A1 F@EC=G@@17F@ G!A E F@?1?E
F J > ;, =?E F@ GA E =<@ F@ AD ? A?A1 F@Z E>@ = A
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A F@C @ 1 =?E ? ?EAC @E F@ DC A?@C & @?? A = FAD =IA
]AH A <? F@ @B@? ?>1 =?E = <@E * C # AG?1 G= =>AAE
I 1 =?E F@ C@D @E F= ?A EA I G= >AAE1 I A I@A1 @
J F=B@ F@ ?= J @A1 F@ D=C A GFAJ G= D= =I @ F@
DC A?@C @1 =?E C@ C?@E ?= IA F= 1=?FA C G F F@ I 1
=?E F@?F=E F@ ?EAC @J @? 1 7 * =C 1 =C<@%H GF F G=
?A F@C >?= C@ E E ?A =DD@=C GF@ F@C F@DC A?@C A E
GC @ AC ?A G= C>@E F= F@C@ G= ?A @B E@? @A1 F@
1AC>@C C @1 7 F ?<1 = J =?F= =?? ? C J @? ?F
DA @ A?G FA =?? ?EAC @J @? 1 AC A F@C GC ?>1 F@ IZ@ A1
F@= @>@E 1AC>@C 1 =?E F= 1=?FA C=1 @CG=CE 1A ?E G F F@
? C J @? ?EAC @E1 F@C@ AJ@ @B E@? @A1 1AC>@C A >A A F@
Z C FA >F F@ DC A?@C J >F ?A I@ =I @ A GC @F J @ 1
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?=?? E J @? 1AC 1AC> ?>=?E @C ?>C@b @ AC ACE@C 1AC
F@E@ B@C A1>AAE 1 =DD@=C@E F= A?@ 1AC>@E ACE@C D CDAC ?>

"&8 '=)(+J/$= 1+=/ . /7 .HE 9/ W7 /)' . ' + ; /=') 2V ' ' NM
"(=2 '/(7+= +1T< 44/ :

A I @ >?@E I A?@ FA J = =?E E= @E CA J >CAB@G= C@ @ B@E I * @ C AA<=?E A ?A?EA?=?E F=B ?>= A J @C A1 F @ ?=J @ A1 FA J = = CA J >CAB@F@ 1ACG=CE@E F@ >AAE I C= G= = E C@ @E G ?@ = @E F I @ 1 F= F ACE@C G= ?F@ DC A?@CH GC ?> J =C 1AC>@E ACE@C G= C@ @ B@E F@ =J @ E= I * @ C C=EI 'GFA @]@ @E F@ ACE@C $ I F@ G ?@ E@ ?@E4 A = F= F G= ?F@ DC A?@CH GC ?> A F D=C @ =CC B@E A?F@ @B@? ?>A1 F@ =J @ E= = F@ CA J >CAB@ = A? =?E F@ DC A?@C =J @ =?E = <@E 1 F@C@ G@C@ AJ @ D=C @ 1AC * C FA J = =?E 4 ?= @ F@ >AAE G@C@ > B@?D A F J ?F@ I= < A1 = @ @C 1A ?E A @!DC A?@C G@C@ F@ ?=J @ A1 * @ C C=EI C & >F J =? 7 1 F@ @B E@? @ A1 F@ C@ @ D A1 F@>?AE G= > B@?= DCAA1 A1 FS @C ?>= F= A = A DCAB@ = > <?AG @E>@ =J A1 AD ? A? ?A @B E@? @ @ F@C = @ A1 F@ @C=? @ I F@ DC A?@C;?@ F@C ACE@C F= I@@?C=@E A F J I@ A?E F@ DCAA1 A1 F=?E&AC ?> ?F@ A?@ = @ 1 ?A DCAA1 A1 F=?EGC ?> F=E I@@?> B@? FA E F=B@ C@Z@ @E F@ @B E@? @ A1 F@ C@ @ D A1 F@ >AAE = A>@ F@C F= @ F@Z C F= F@C@ ?A@B E@? @ ?A F@ >F @ A1 F@ @C ?> A1 @ F@C ACE@C F@C@ F@ @B E@? @ A1 1AC>@C ?F@ A?@ = @ I ?A@B E@? @ = = ?F@ A F@C H1?3
F@ DC A?@C G= ?E @E 1AC @C ?> = 1AC>@E = @D =? @ A1 = I A1 @] F=?>@ 1AC ?= A?F=E I@@?I CA >F = =>= ? F@ DCA @ AC A?= I = @>@E A F=B@ I@@?= @D @E I F J 1AC F= = J A ? ?1=BAC C A1 F@ DC A?@C =?E = B@CE C@ AB@C@E =>= ? F@ DCA @ AC IA F J @ =J @ A F@ <?AG @E>@ A1 F@ DCA @@ AC F= F@C@ G@C@ A F@C = @D =? @ A1 F J F @] @? @ G!F F F@ E@ =C@E A I@ 1AC>@C @ =?E G= E AB@C@E F= E C ?> F@ @=C 9:-=?E 9: F@ DC A?@C F=E I@@?C@E @E I F@ IC=? F I=?< = @ I C A1 F@ AFEA?=?E A ? A ? A < =?< N F@ F @1 A11 @ A1 GF F G= = . AJ I=CE C@@ d G F @ @B@? I 1AC B=C A J EC=G? I F J =?E D CDAC ?> A I@ = @D @E I F@ DCA @ AC =?E J =E@ D= =I @ = . AJ I=CE C@@ I A? F@ IZ@ A1 GF F F@ GAC@ F= F@ F=E ?@B@C I@@?=DD @E Ø * =? 1 F@ @ I &@C@ @?@G=I @ =?E F=E = I@@?DCAB E@E 1AC I F@ DC A?@C @ F@C I 1C@ F I AC I C@1@C@? @ A F I= =? @ = F@ C J = C =?E = J A?> F@ J G= F= GF F G= F@ IZ@ A1 F@ ?E J @? =?E 1@ E @ Z =IA F@ J @ GF@?F@ AI = ?@E =C@= I 1AC F@ =J @ =J A ? @]= F@ J =?=>@C A1 F@ IC=? F I=?< A E A? DCAB@ F= F= I = G@ = = F@ A F@C F=E I@@?D= E ?A F@ C@E A1 F@ DC A?@C I AJ @ A?@ AC A F@C =?E = AJ @ J @ AC A F@C I I GFAJ AC GF@? F@ A E ?A =<@ A? F J @ 1 A G@=C & F@?@B@C F@ 1@ E @ FAG@B@C ? J = A? F=E = G= I@@?> B@? A F@ DC A?@C F@ IAE A1 F@ I G= ?F@ DC A?@CH F=?EGC ?>= G@ = F@ ?EAC @J @? * = @

R0 /) 29 =2 Y 2V .E 9 = :/1 = 2 :/=/(J/ (/12 = :/(+4 2 #+=0) &2(49/)22:=+ 49/ "(=2 /(: 92 =9/7/: 49+ 9/0 /7 3249 49/ "+(1/*= 7/(/ 2(:/(/: +: 49/ 4 ; / 79/ 49/# 7/(/ 2(:/(/: 9/(/&2(/ 9/ ; <=4 9+J/ 0 27 49/ 12 4/ 4= 2& 3249 2(:/(= #1*+ ;) 49/)22:= +: 234+) 49/ (:J/(# 42 9 ; =/* 9/ "(2J/: / 7+= 234+) 49/ ; &2(9 ; =/*& +: 49/(/ 7+= 24 /J/ = <=" 1 2 2& +/# 2 /* =/ 3/) /:) +) /: 49/ 4(+ =+14 2 49/(/ 7+= 49/(/&2(/ 2 49/=/ &+14= +2 / +=4(2) "(/=<; "4 2 49+4 9/ =/ 4 49/ 2(:/(= 2(+4 +# /J/ 4= / 2<) 9 42 1+# 2 9 ; 42 =9/7 792 9+: :2 / =2 7 9/ 49/ "(22& 2& 49/ 9+ :7(4) 42 2 2& 49/ 2(:/(= = +: :/: 42 49/ 249/(& +14= 49/ 2 *# (+4 2 +4 12 1*<=2 = 49+4 49/ "(=2 /(=/ 4 3249 2(:/(= >

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= E 7 F= ? F AD ? A? F@C@ G= ?A @B E@? @ A >A A F@Z C 4 F@G F= F@ DC A?@C F=E? @C@E E DA @E A1 AC D A11 F@ F ?F@ A ? A1 < ? ?ACE@C A DCAB@ F= F=C>@ G= ?@ @ =C A =EE @@B E@? @A1 AJ@ = EA?@ ?F@ A ? GF F ?F@@ @A1 F@ =G = J A ? @E A =?% @C ?> E DA ?> AC D ?>A11 F ?A F ?>F=E7I@@?F@G?F I@ A?E F@ 1A >@C GF F J I@ = J@E1AC F@D CDA @A1 F AIZ@ A? =?E F@ 1= F= F@ I A 1AC>@E F=E 1A ?E G= ? A F@ = A ?A1 F@DC A?@C1 3 = F@ I=?< I ?A J @=? FAG@B@C =DD@=C@E I GFAJ F =?E F@ A F@C F F * F@@?D= E ? A F@ I=?< F= J >F F=B@XI@@D I F@ DC A?@C1 3 ?> >?AC=? @ F= F@ I G@C@ 1AC>@E 1 A F@G= ?A > 1 F@ <?@G F= 1= F@ = @ G= DCAB@E I F@C@ G= ?A DCAA1 1F= @B@? 1 F@E E <?AG F@J A I@ 1AC>@C @ F@ D= E F@J ? A F@ I=?< F= J >F F=B@ I@@? EA?@ I =B=C @ A1 G= =?E ? @ F@ D=CT =C J @ FAE G= DCAB@E A F@Z C FJ G@C@ F@ A = F= F@ D= J @? F=E I@@? J =E@ ? F AC F= G= V ?ACE@C A =CC B@ = =B@CE A1> F@Z D G@C@C@b C@E A = GF= G= ? F@ A?E A1 F@ DC A?@C GF F A? @E F@ A11@? @ =? = A1 @C ?> ? F@ @? @ A1 F ?E J @? ?E@C F@ C J =? @ F@C@1AC@ F@ GA E C@ AJ J @?E F@Z C A = ?A > 183

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b’ @ A?% 1’E@ B@C@E’G F’=’<?AG @E>@’A1’ ’I@ ?>’1AC>@E% =?E’1AC’ F@’D CDA @’A1’ I@ ?>’ @C@E’I ’ CC% G=’ ?’ @ 1’=’E DA ?>’A1’ =IE’D ?>’ =G=’A1’ F@’?A @’ ?’ b @ A?% G F ?’ F@’ 8’ @A’ -% % % % ’ F@’Z C ’1A ?E’ F@’DC A?@C’> % =?E’ =EE@E’ F=’ CC’E E’?A ’<?AG’ F=’ F@’?A @’> B@?’ A’F J’I ’ F@’DC A?@C% =?E’ I ’F J’A11@C@E’ ?’ D= J@?’ A’"@G A?% G=’ =’1AC>@E’?A @’ ?E% DA?’ =’ = @’C@ @CB@E% F@’Z E>@’ FA >F’ F ’ CC’<?@G’ ’G=’ 1AC>@E% I ’G@C@’A1’AD ? A?’ F=’ F@’> B ?>’ F@’?A @’ A’ CC’ F=’ F@’J >F’D= ’ ’G=’ =’E DA ?>’ F@C@A1’A’F J% =?E’ F=’ F@’ A?T B A?’G=’C >F ’N d’ ’

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2’:42’+* ’ A?E A?=’ @C ?>’ A1’=’1AC>@E’ ? C J@?’ ’ =’ 11 @?

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=? G@C ?>‘ ?‘ A F@C‘C@ D@ ‘ F@‘ E@ C D A?‘ A1‘ F@‘ ‘ = ‘ F=B ?>‘ GF @‘ @ @C ‘A?‘ =‘ I = <‘ >CA ?E ‘ F@‘ E@1@?E=? ‘ ?‘ ACE@C‘ A‘D@ B‘ =E@‘ =?‘ ??<@@D@C‘ F= ‘F@‘ G= ‘ =‘ J =?‘A1‘ I =? @‘ A?@‘ E= ‘ =1 @C‘ E ??@C‘ D @E‘ A ‘ =‘ DA <@ IAA<‘ =?E‘ FAG@E‘ F@‘ ??<@@D@C‘6‘8 ‘ ‘ ‘8 ‘ 0B ‘ ‘ & ‘ .‘ A1‘ GF F‘ = ‘ F@‘ ‘ ‘ 5‘ N‘ ‘ ‘ ‘3 ‘ ‘ F@‘ E@1@?E=? ‘ = E‘F@‘ E E‘?A ‘ <@‘ A‘ =CC ‘ A‘J F‘ DCAD@C ‘=IA ‘F J‘=?E‘E@ C@E‘ F@‘ ??<@@D@C‘ A‘ =<@‘ =C@‘ A1‘ F@J‘ 1AC‘ F J‘ F@! ??<@@D@C‘ AA<‘ F= !>@‘A1‘ F@J‘= ACE ?> ‘=?E‘ FA >F‘ F@‘E@1@?E=? ‘= @E‘B@C ‘ DC E@? ‘ F@ ‘G@C@‘ D ‘ ? A‘ =‘ AB@C‘ =?E‘7 @= @E‘ D‘ I ‘ F@‘ E@1@?E=? ‘ F J @ 1‚‘ F@‘ ??<@@D@C‘C@ @ B@E‘ F@J‘ 1CAJ‘ F J‘ ?‘ =?‘ @?B@ AD@‘GF F‘=1 @C4‘F=B ?>‘ <@D ‘ 1AC‘ AJ@‘ J@‘ DA?‘ AJ@‘ T D A? ‘ =1 @CG=CE ‘ C@= @E‘ I ‘ F@‘ A?E ‘ Di‘ F@‘ E@1@?E=? ‘F@‘ ICA<@‘ AD@?‘ =?E‘ 1A ?E‘ ‘ A‘ A? = ?‘ F@‘ ?A @ ‘ =IAB@‘ J@? A?@E‘ F@‘Z E>@ ‘F@ E‘ F ‘ A?B A?‘GCA?>‘ I@ ?>‘A1‘AD ? A?‘ F ‘E E‘ ?A ‘ = J A ? ‘ A‘=?‘ @C ?> ‘ F= ‘ ?‘ ACE@C‘ A‘ J =<@‘ ‘=?‘ @C ?>‘ F@ ‘ @@J@E‘ A‘ I@‘A1‘AD ? A?‘ F= ‘ ‘ FA E‘ I@‘D=C @E‘G F‘AC‘ @?4‘ E@C@E‘AC‘A11@C@E‘ AC‘ @E‘ ?‘ AJ@‘G ‘ ‘ A‘ >@ ‘ J A?@ ‘AC‘ C@E ‘ DA?‘ ‘ " B

9+4‘ +14=‘ + ; 2< ‘ 4‘ 42‘ + ‘‘ <44/(‘)

DA?‘ =?‘ ?E J@? ‘ 1AC‘ @C ?>‘ =‘ 1AC>@E‘ C@ @ D ‘ =DD@=C@E‘ F= ‘ F@‘ DC A?@C‘F=E‘ IA >F ‘ A?@‘ = ‘ =‘ b =CC ‘ J=?=>@E‘ I ‘A?@‘ C?@C‘ A‘ F@‘=JA ? ‘A1‘JAC@‘ F=?‘ ‘ @‘G= ‘C@D@= @E ‘=DD @E‘ A‘1AC‘D= J@? ‘ =?E‘ J=E@‘ C@D@= @E‘ DCAJ @ ‘ A1‘D= J@? ‘ I ‘ = ‘ = ‘F@‘ = @>@E‘ F= ‘F@‘F=E‘D= E‘1AC‘ F@‘ A?@‘ = ‘F@‘ J@‘ =?E‘ F= ‘ F@‘F=E‘ =‘C@ @ D ‘ >?@E‘I ‘ C?@C ‘ ?‘ F ‘ AC @C‘ GFA‘F=E‘ T @@E@E‘ C?@C‘= ‘J=?=>@C‘ G@? ‘ A‘F J‘ =?E‘ F@‘DC A?@C‘ ‘ ‘ ‘ 0 ‘ ‘ N ‘ ‘ ‘

''<44/(')' 2&' I'&2()/ :'' 'P =4(<; /'4' 3# +'' ''21/'4' +)/'4'+4'49/' ''=4+'1/' 2&' +' "/(=2''0'27P ')' 4'42' 3/' &2()/:'+':'&2(' 3 =' <=/'=' +'' <44/(')'3# =<13' "/(=2'

DA?' =?' ?E J@?'1AC' @C ?>' ='1AC>@E' = A ?=I @' C@ @ D' 1AC' >AAE \' =DD@=C@E' F=' DCA @@E ?>' G@C@' =<@?' =>= ? ' F@' DC A?@C\' GFA' G=' =' D=G?ICA<@C\' 1AC' ?A' C@ AC ?>' @C =?' >AAE' F=' F=E' I@@?' D @E>@E' G F' F J\' =?E' A?' F@' F@=C ?>' F@' DC A?@C' G=' E@1@?E@E' I '=?' = AC?@ \' GFA' ?' F ' DC@ @? @' DCAE @E' F@' 1AC>@E' = AG= @' C@ @ D' 7! '\'=' D=G?ICA<@C!' <@ d\' =?E' = @E' F=' ' G=' F@' <@' F@' DC A?@C' F=E'> B@?' BF@?' F@'>AAE'G@C@' D @E>@E';' F@'Z C '1A ?E' F=' ' G=' 1AC>@E\' =?E' F=' F@' DC A?@C' E E\' FCA >F' F@' F=?E' A1' F ' = AC?@ \' E@ B@C' A' F@'Z @ \' =

79/''49/' 72(:=' 2&' 49/' 1*+<=/' +(/' 12'P =:/(/:'?49/' :' **'0I' -!!' /'+14/:' 49+4' &' +'#' "/(=2'' =9+** 0<44/($ 1' 0O'27 ')' 49/' =+;/' 42' 3/' &2()/:'$ 0+'#'(/1/ "4$ 1' 07 49' '4/'4' 42':/' &(+<:'N 0' '0&: S & 0 '' 2(:/(' 49/(/&2(/' 42' 3(')' +' 1+=/' 7 49 '' 49 =' 1*+<=/' 4' =' '/1/==+(# 42' "(J/'& (=4'49+4' 49/' (/1/ "4' 7+=' &2()/:'?=/12':'#' 49+4' 49/' "(=2'/('O'/7' 4' 42' 3/' =2? 49 (:*#' 49+4' 9/' <44/(/:' 4? +':'*+=4*#' 49+4' 49/' <44/(')' 7+=':2'/' 7 4*(' '4/'4' 42'] :/&(+<:' =2;/' "/(=2'' 27' '' 49 =' 1+=/' 4' =' 1*/+(' 49+4' 49/' (/1/ "4' +=' &2()/:' +':' 49+4' 49/' "(=2'/('O'/7' 4' 7+=' =2' 4' =' /T<+**#' 1*/+('49+4' 49/' (/1/ "4' 7+=' <44/(/:'? &2(' 49/(/' 7+=' +'' +14<+*' ;+'<+*' 4(+: 4 2'' 2<4' 2&' 49/' 9+':=' 2&' 49/' "(=2'/(' '42' 49/' 9+':=' 2&' 49/' "(2=/1<42(' ?+':' 79+4/J/(' 3/' 49/' /V4/'4' 2&' 49/' ;/+' ')' 2&' 49/' 4/(;' 0<44/($ 49/(/' 1+'' 3/' '2':2<3' 49+4' +4' +** /J/'4=' 4' '1*<:/=' /J/(#' 1+=/' 79/(/' 49/' '=4(<;/'4"+==/=' 2<4' 2&' 49/' 9+':=' 2&' 2'/' "/(=2'' '42' (2=/' 2&' +'249/(' +=4*#' 49/' 6<(#' &2<':' 49+4' 4*/' +1' 7+=' :2'/' 7 49' '4/'4' 42' :/&(+<:' +':' 49/(/' 7+=' +3<':+'4'/J :/'1/' 2&' 4' 9/' 12'&<=2'' '' 9/'+(-;/'4'+(2=/' &(2;'12'&2<':')' 4*/' 4444/'')' 7 49' 49/' '4/'4' 42':/&(+<:' '=4/+:' 2&' 12':=:/(')' /+19' =/"+(+4/*#' 9/' &+14' 2&'<44/(')'3/')'1*/+(' 49/' 2'*#' (/;+'')'T</=4 2'' 7+=':'4/' '4/'4' 42' :/&(+<:' 0+'#' "/(=2'' 79+4=2/J/('$/V =4' ^ 9/(/' =' '24' +'' /V"(/== 2'' '' 49/' +14' 49+4' ':1+4/=' 49+4' 49/(/' ;<=4' 3/' +'&(+<:' 12;;44/:'? =4 ** */==' 49+4' =<19' &(+<:' ;<=4' 3/' 12;;44/:' 3#' ;/+'=' 2&' 2('<"2'' 49/' &+ 49'2&' 49/' '=4(<;/'4' /V' &' 9<0+(:'=// ;=' 42' 9+J/' 3//'' /'4 (/*#' ;=P <':/(=422:' '' 49 =' 1+=/' '' 49+4' /+=/'49/' "(=2'/(=' =9/7/:' +' &J/' 9<':(/:' +':' +' & &4#' '24/' 2&' 4*/' :/=1("4 2'' ;/'4 2'/:' '3<4' 2&' 79 19' 4 */' '' 0//"/(' 0 5' N' ' 3 7 ' 0 9/' N '2&' 49/' '24/=' 49/(/&2(/' '/JJ/(' 7+=' '' &+14' =//'' 3# 49/' '' 0//"/(':+':' 4' =' /T<+**#' 1*/+(' 7+=' '/JJ/(' '4/':/:' 42' 3/'=//'' 3#' * ;' '=' 49/' 72(:' 0"/'=$ 72<*:'+4' 2'1/' 9+J/' :=1*2=/:' 49+4' 49/' '24/=' 7/(/' '24' 3+'0' '24/=' +4'+**' 0 9/'6<:)/=9/*:'49/' 12'J 14 2'' 7(2')' 3/')'2&' 2" ' 2''49+4' 49=':':''24'+;2<'4'4/' ++'<-')'$+':' 49/#' 7/(/' 1*/+(*#'()94? &2(' +==<;')' 49+4' 49/(/' ;+#' 3/'+''<44/(')'3#'=9/7')' +'' '=4(<;/'4' ='=' 1*/+(' 49+4' 49+4' 1+'' 2'*#' 3/' 79/(/' 49/' 792*/' 2&' 49/' '=4(<-' ;/'4' =' /V"2=/:' 42' J/7' 2(' "2== 3*#' 7*1(/' 4' =' "(2:<1/:'+':'+''2"'2(4<' 4#' W&*2(:/:' 2&' '="/14')' 49/' 792*/' 2&' 4

F@' C@DAC'=EE' ! F=' ?' ACE@C' A' J=<@' '=?' @C ?>' F@' @@J@E' A' F@' A1' AD ? A?' F=' ' FA E' I@' D=C @E' G F\' AC' @?E@C@E\' AC!A11@C@E\' AC' @E' ?' AJ@' YG=' A' >@' JA?@' AC' C@E' DA?' H 6AG' F@' GACE' ! A'>@' JA?@' AC' C@E' DA?' \H AIB A ' A? ' =DD ' A' F@' GACE' 7 @E' ?' AJ@G=\H=?E'?A' A' F@' DC@B A ' GACE ` =?E' F@' Z E>@ \' I@ ?>' @=C' F=' '=' D=C ?>' G F\' @?E@C ?>\' AC' A11@C ?>' =?' ?C J@?\' GA E' I@' =?' @C ?>\' = A' FA >F' F=' F@C@' J >F' I@' =' = @' GF@C@'=?' ? C J@?' J >F' F@' A' @E'=' A'>@' JA?@' AC' C@E' DA?' \' FA >F' ' G=' ?@ F@C' D=C @E' G F\' @?E@C@E\' AC' A11@C@E\' =?E' F=' F ' GA E' <@G @' I@'=?' @C ?>' @F' ' F@' = @' A1' @>' L' @E1ACE\' B @C@' @' ? C J@?' B=' F@G?\' I ' ?@ F@C' D=C @E' G F\' @?E@C@E\' AC' A11@C@E' F@' BACE' 7 @E' A'>@' JA?@ \H , \' J@=?'A <D(' ? @?' A' >@' JA?@ \' , ' =?E' = @' =EAD @E' A' ?E = @' F=' BF@C@' F@C@' '?A'=' D=C T ?>' G F\\' @?E@C ?>\' AC' A11@C ?>\' @'1= ' J ' FA 3' F'=' @C'=' E@?A @'=?' ?T @?' A' >@' JA?@' AC' C@E ' &F@C@'=? ? C J@?' ' D=C @E' B \' @?E@C@E\' AC' A11@C@E\' F@'=' 'EA?@' '=?' @C ?>;I ' GF@C@' F@'=' 'EA?@' EA@'?A'RJA ?' A'=' D=C ?>' B F\' @?E@C ?>\' AC' A11@C ?>\' J=' G@' 'F@' F=' F@'AIZ@ ' G F' BF <' F=' = ' ' EA?@' J=' I@' ?@ @ =C' ? ACE@C' A' E@ @C J ?@' GF@ F@C' F=' =' 'EA@' =JA ?' A' =?' @C ?>' # C ?>' F@' =C> J@?\' @CB \' \' =E\' ? 1' ?' F@' =@' A1'Z 1 = A?' A1' I=' =' D@C A?' F=E' DCAE @E' AJ@' N1AC>@Ed' F=?<' ?A @' A' F 3' F=' 'F@' G=' 'DA @ @E' A1'=' 11 @?' =JA ?' A1' DCAD@C \' GA E' ?A' F=' ' =JA ?' A' =?' @C ?>' A1' F@' ?A @ 'V\H & >F ? =?\' \' 7 DDA @' F@' DCADA @E' I=' G@C@' =<@E'!?' @]=J ?= A?' I@1AC@' F@'Z E>@'=' F=JI@C \' Y' =B@' A' D=E' =' F@' C=@' E @' ?' C@ D@ ' A1' A C' FA @' Vn' =?E' F@' F=E' =E\' [ )@ \' =?E' ' 3DCAE @' F@' C@ @ D \n' =?E' F@' F@?' DCAE @E' 1AC' ?D@ A \' =JA?>' A F@C \' A?@' BF F' B=' ='1AC>@C 'V' AC' DDA ?>' ='J=?'Z CADA @' A' IACA 3'=' J'A1' JA?@ \' =?E\' ?' ACE@C' A' = 1' F@' @?E@C\' <(.' Y?b C@ \' F=' F@' D=E' E' =' F 'C=@ \' F@' C@T D @' ?' F@' =11 CJ=B@\' =?E' DCAE @' F@' C@ @ D ' =' DCAA1' A1' F=B ?>' D=E' F@J \' BF=' !A E' A?' = ' A' F=' = @' V\H @CT B \' ' \' 7 =<@' F@' = @' A1'Z 1 = A?' YA' I=;=' J=?' DCAE @'=' 1AC>@E' E@@E\' AC' ='1AC>@E' @=@\' A' DCA H' =' F@' 'A1' 11 T @?' DCAD@C \' BA E' =' I@' =?' @CT ?>V\H 6'

AG@E' A' A @ %' G=' 11 @?'@B E@? @' ?E' E=C%' @ >'6@ ACE@C%' F@ E' F=' 'G=' ?A' 11 @?';' =?E' F@' @ JA?' A1' 5@=C @%' A' F@G' F@'F=?EGC ?>' A'I@'1AC>@E%' G=' J=@ 'C@Z@ @E%' A?' F@' >CA ?E' F=' FA >F' ' J >F' ?A' I@' F ' F=?EGC ?>%' @' ' J >F' I@' F@'F=?EGC ?>'A1'=?A F@C' & J'5@=C @%' A'GFAJ' Fp'I ' J >F' I@' D= =I @%' 1 3' ' DA?' F ' = @'='EA I' ' >>@ @E%' GF@ F@C' F@'1= 'A1' & J'5@=C @' I@ ?>' =?' ? J=@'=b =?=? @' =?E' ACC@ DA?E@?'A1' F@'EC=G@C%' ?A' @B E@? @' I@ ?>' >B@?' A1' F@' @] @? @'A1'=? 'A F@C' & J'5@=C @' A'GFAJ' 'J >F'I@' DDA @E' F=' F@'I 'G='J=E@' D= =I @%' G= ^'?A' 11 @?'@B E@? @'A1' F@' E@? 'A1' F@'D= @''Cd

(2"(/42(' 2&' =4210' /V' +; '/:'42' "(2J/' 9 =' :/'4 4#

' = @'F=' I@@?'=C@=E 'J@? A?@E%' GF@C@%' DA?'=?' ?E J@?' 1AC' D@C A?= ?>'='DCADC @ AC' A1' A <%' F'DCADC @ AC'G=' @]=J ?@E' ='='G ?@ %' A' F@G' F@'=JA ?'A1' F@' A <'F@'F=E'=' F@'I=?<';' =?E' F=' F@' J'1AC'GF F' F@'DC A?@C'F=E'AI=?@E' F@'E B E@?E' G=CC=? %' G=' F@' @]= ' J'E @' A' F J'=' F@' J@;' @B E@? @' GF F'GA E'F=B@' F@'@11@ 'A1'DCAB ?>'F ' E@? %' N d'

9/(/' 49/' '+;/' 2&' 49/' :(+7/(' +'.:' +*='2' 49+4' 2&' 49/' '.:2(=/(' 7/(/' &2()/.:' 2'' +' 9 **' 4' 7+=' 92*:/''' '/4' 42' 9/' +'' 236/14 2'' 49+4' 49/' :(+7/(' 7+=' '24' = @E'42' "(2J/' "2'' 792;'49/'3 **' 7+=' :(+7'' 49/(/' 3/ ')' 47 2' 2&' 49/' '+;/' +'4' 49/' "'*+1/? +'.:' ' 49+4' 4' ;)94' 3/' =9/7'' 3# 249/(' /J :/'1/' 792' 49/' "(P =2''/(' ;/+'4' 3# 49/' "/(=2'' 792=/' '+;/' 9/' &2()/:' +=' 49/' "+#/' +'.:' ':2(=/(

AG@E' A' A @ %' G=' 11 @?'@B E@? @' ?E' E=C%' @ >'6@ ACE@C%' F@ E' F=' 'G=' ?A' 11 @?';' =?E' F@' @ JA?' A1' 5@=C @%' A' F@G' F@'F=?EGC ?>' A'I@'1AC>@E%' G=' J=@ 'C@Z@ @E%' A?' F@' >CA ?E' F=' FA >F' ' J >F' ?A' I@' F ' F=?EGC ?>%' @' ' J >F' I@' F@'F=?EGC ?>'A1'=?A F@C' & J'5@=C @%' A'GFAJ' Fp'I ' J >F' I@' D= =I @%' 1 3' ' DA?' F ' = @'='EA I' ' >>@ @E%' GF@ F@C' F@'1= 'A1' & J'5@=C @' I@ ?>' =?' ? J=@'=b =?=? @' =?E' ACC@ DA?E@?'A1' F@'EC=G@C%' ?A' @B E@? @' I@ ?>' > B@?' A1' F@' @] @? @'A1'=? 'A F@C' & J'5@=C @' A'GFAJ' 'J >F' I@' DDA @E' F=' F@'I 'G='J=E@' D= =I @%' G= ^'?A' 11 @?'@B E@? @'A1' F@' E@? 'A1' F@'D= @''Cd

' = @'F=' I@@?'=C@=E 'J@? A?@E%' GF@C@%' DA?'=?' ?E J@?' 1AC' D@C A?= ?>'='DCADC @ AC' A1' A <%' F'DCADC @ AC'G=' @]=J ?@E' ='='G ?@ %' A' F@G' F@'=JA ?'A1' F@' A <'F@'F=E'=' F@'I=?<';' =?E' F=' F@' J'1AC'GF F' F@'DC A?@C'F=E'AI=?@E' F@'E B E@?E' G=CC=? %' G=' F@' @]= ' J'E @' A' F J'=' F@' J@;' @B E@? @' GF F'GA E'F=B@' F@'@11@ 'A1'DCAB ?>'F ' E@? %' N d'

F@' DC A?@C%' =J@'#AG?@ %' G=' ?E @E' 1AC' 1AC> ?>'='I 'A1' @] F=?>@' D CDAC ?>' A' F=B@' I@@?' EC=G?' I 'A?@' ?EC@G' A J@%' D= =I @' A' F@'ACE@C' A1' AF?' AG@CI ' CA ?' AJ@' @ @J%'GC @?' I ' F@'DC A?@C'=1 @C'F '=DDC@F@? A?%' ' @=C '=DD@=C@E' F=' F@' ?=J@' A1' F@' DDA @E' EC=G@C%' ?EC@G' A J@%'GFA'G=' F@' DC T A?@CH' ? @%' G=' 1AC>@E'$ =?E' '=A'=DD@=C@E' 1CAJ' F@' =J@' @ @C' F=' F@' AF?' AG@CI %'GFA @' ?EAC @J@?'G=' ? @?E@E' A' I@' A ? @C1@ @E' I ' F@'DC A?@C%' G=' F@' b?' A1'=?A F@C'D@C A?' A1' F@' =J@'?=J@'=' B@CDAA ' 'G ?@ ' A'GFAJ' F@'DC A?@C'D= E' =G=' F@' I ' =@E' F=' F@' b @ A?@E' F@'DC A y1@C'=' F@' J@%' =?E' F=' F@'= A ?' F@' >=B@' G=' F=' F@' EC=G@C' A1' F@' I %' ?EC@G' A J@%' G=' ='>@? @J=?' A1' C@E 'q ' B@CDAA %'=?E' F@' ?EAC @C'=' Fu@ @JA?>@C' FpC@%'GFA'F=E' C@ @B@E' F@' I ' ?'D= T J@?'1AC' F@@ @';'=?E' F@' DC A?@C'1 C F@C' =E%' F=' F@' J >F' E@D@?E'A?' %' 'G='='>AAE' I ' "@ F@C' ?EC@G' A J@'?AC' AF?' AG@CI ' F@' A?'G@C@' = @E'='G ?@ @';' I ' AF?' AG@CI ' F@' 1=F@C%' G='DCAE @E%'=?E' F@' GAC@' F=' F@' ?EAC @J@?'G=' ?A ' ?'F ' F=?EGC ?>';' F=' F@'F=E' B@E' F C]' @=C ' ?' B@CDAA %' =?E'<?@G'?A' A F@C'D@C A?' A1' F@' =J@'?=J@' F@C@' @ F@C'=' F@@ @T J A?>@C' AC' A F@CG @%' @] @D'F ' A?%' BFA' F=E' @1'F J'=IA '1A C' J A? F ' I@1AC@%'=?E'=1 @CG=CE ' =CC @E' A?' F@' =J@' I ?@ 'A1'=' Fu@ @JA?>@C' ?' #@=? C@@ ' F=' F !' A?' F=E'1= @E%'=?E' G=' = @ '>A?@' A' =J= =%' F=' F@' ?EAC @J@?'G=' ?A '=' = ' <@' F ' A?H' F=?EGC ?>';' =?E' F@' E E' ?A ' I@ @B@' ' A' I@'F ' F=' ^F@' DC A?@C'=?E' F ' A?' G@C@' = b = ? @E%' =?E' F@' DC A?@C' F=E' IA >F' AC<' A1' F J '' ?A F@C' G ?@ ' = A' DCAB@E' F=' F@' ?T EAC @J@?'G=' ?A ' <@' F@'F=?EGC ?>'A1' F@' A?%'=?E' F=' F@'E E' ?A ' I@ @B@' ' A' I@'F ' ?' AIZ@ A?' G=' =<@?' A?' I@F=1'A1' F@' DC A?@C%' F=' ?EC@G' A J@%' F@'EC=GJC'A1' F@' I %' A >F' A' F=B@' I@@?' = @E' A' DCAB@' GF=' AF?' AG@CI ' 'G=%' ?' GFA @'1=BA C' 'G='EC=G?';' I ' F@'@B E@? @' G=' @1' A' F@' Z C %'=?E' F@' DC T A?@C' G='1A }E' > ' ?E' F@' DA ?' I@ ?>'=1 @CG=CE ' IJ @E' A' F@' A? E@C= A?' A1' F@' G@ B@' Z E>@ %' F@ 'G@C@'= 'A1' AD ? A?' F=' F@' A?B A?' G='DCAD@C' # @C%' %' GFA'=1 @CG=CE 'D= @E

"OB' "2'=2'3#S' 1+=/' :' /+19' HHG G' +=4' ' '1'.N'=' "'NNM W(B' G' +=4' ' '1'.N'='YA' "' NND

9/(/' =// ;' 42' 9+J/' 3// '' =<&&1/< /J :/'1/' 2&' 49/' :/'4 4# "B +((S' 1+=/' :' /+19' IHI

@? @? @' DA?' F@'DC A?@C%' ?'=EB@C ?>' A' F@'C@= A? ' DA?'GF F'
F@' AD ? A?' A1' F@' Z E>@ ' DCA @@E@E%' = E' F= ' F@' AIZ@ A?' DT
DA @E' F= ' F@C@' G= ' ='>@? ?@' EC=G@C' A1' F@' I ';' GF@C@= ' 'G= '
=DD=C@? %' 1CA J ' F@' DC A?@CH'AG?' = <?AG @E>J@? ' ?' F ' @ @C %'
F= ' F@' ?=J@' A1' F@'EC=G@C%' = 'G@ '= ' F= ' A1' F@' ?EAC @C%' G= '
1AC>@E' I ' F@' DC A?@C',' =?E' 1' ? d' C@= ' EC=G@C' @] ' @E%' =?E' F@'
AIZ@ A?' G@C@' = A?QE%' 'GA E' F@' A' @] @' A?@' 1AC>@C ' I@ = @'
=?A F@C'F=E' I@@?' AJJ @E ' @' AI @CB@E%' ?' F@' @ A?E'D = @%'
F= ' F@'DC A?@C'F J @ 1'F=E'= @C = ?@E'GFE'G= ' ? @?E@E' I ' F@'
AF?' AG@CI 'GFA @' ?EAC @? @? 'G= '1AC>@E',1AC%'GF@?'F@' ?@>AT
= @E' F@' I %'F@'C@DC@ @? @E' F J ' A'F@'=' F@@ @JA?>@C'= ' B@CT
DAA',';=?E' I '=?A F@C' @ @C'A1' F@' DC A?@C' 'G= ' @=C' F= 'F@'
J@=?' AG@CI 'Fu' A?',' 1AC' F@C@I ' F@' C@b @ @E'F ' ? @' A'
>A' A' AG@CI H' JA F@C%'=?E' E@ C@' F@C' A' = '?A F ?>' =IA ' %'
GF@ F@C'F@' F=E' =? ' A? @C?'AC'?A %'AC'GF@ F@C'F@' ?EAC @E' 'AC'
?A ' ?E' F@' A? E@E' I ' = ?>' F= %' 'I@ ?>' DCAB@E' F= ' F@'
?EAC @J@?' G= ' ?A ' F@' F=?EGC ?>' A1' AG@CI ' F@' A?%' F@'
@B E@? @'A1' F@'1AC>@C 'G= ' 11 ' =?E' AJD @ @%'=?E' F@' A?B A?'
C >F %' N d' ' '

& F@C@'='DC A?@C'G= ' ?E @E'1AC'1AC> ?>'=?E' @C ?>'=' F@b @' BE@? @ '='
D CDAC ?>' A' I@' EC=G?' I ' ' ?EC@G@ ' A?' *@ C ' A?@ %' A E%'
=?E' A%'DCAA1'I '=' @C<'A1' F@ C'FA @' F= '?A'D@C A?' A1' F@' ? = ' D@C A?%'
=?E' ?=J@' A1' ' ?EC@G@ ' <@D ' =? ' = A ?' F@C@' AC' F=E' =? '
C >F ' A' EC=G' F@b @ ' A?' F@ C' FA @%' G= ' F@ E' 11 @?'E"!& #'
*6 ! '@B E@? @' A' >A' F@' Z C ' F= ' ' ?EC@G@ ' G= ' =' 1 A '
D@C A?%') *' ('GF@C@' =' DC A?@C'G= ' ?E @E'1AC' 1AC> ?>' ='I '
D CDAC ?>' A'7F=B@' I@@?' = @D @E' I ' 7' =J @ ' 6? >F %' * =C<@ T
D = @%' CJ ?>F=J%H =?E' F@'DCA @ AC' = @E' F= ' F@' F=E'I@@?'
G @' F@C@' A' ?b C@' =1 @C' 6? >F %' =?E' F=E%' A?' F@' @ A?E'
A = A?%' ?b C@E' = ' F@' I=?<' F@C@' =?E' = ' =' D = @' GF@C@' F@'
AB@C @@C ' A1' F@' DAAC' J@ %'=?E' F@' F=E' J=E@' ?b C @ ' = ' "A T
?>F=J%' = ' GF F' D = @' F@' I ' D CDAC @E' A' I@' EC=G?' 1AC' %
& @II' F@'EC=G@C%' I 'G= '?b '=I @' A' F@=C' =? 1E ?>'A1'F J ';=?E'
F@'=EJ @E' F= 'F@'G= ' =' C=?>@C' A' IA F' F@ @' D = @ ' 'G= '
IJ @E' F= ' F@' @B E@? @' G= '?A ' 11 @?%'=?E' F= 'G ?@ @ '
FA E' F=B@' I@@?' = @E%' GFA G@C@' = b = ? @E'G F' CJ ?>F=J'
=?E' "A ?>F=J'C@ D@ B@ ';I ' 'G='F@ E' F= ' 'G= '@B E@? @'
A' >A' A' F@'ZJ ' 'G= '?A ' @C = ? ' F@' JA ' = 1= AC '
@B E@? @';' ?AC' G= ' ' F@' @B E@? @' F= 'G= ' = '>B@?' ?' F'
= @ ';' I ' 'G= '@B E@? @%'=?E' 'G= '1AC' @'Z C ' A' = 'GF@ F@C'
'G= ' 11 @? %' ?' F@'=I @? @'A1'=? '@B E@? @'A?' F@'D=C 'A1' F@'
DC A?@C%'GFA'I@ '<?@G' F@' = @'A1' F@' J= @C%' 1 3'

& F @' =?E' #=B 'G@C@' ?E @E' 1AC' 1AC> ?>' =?E' @C ?>' F@' B E@? @'A1'
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"B' 27'/=S'1+=/'G' +=4' ' '1' .N' "&B' /V' 3' ')' A' ' ' ' .GH'
='YAA' "'NND +(0' ' ' ' +(0/'.' +':' 2 +<:'
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; 49' :(+"/(' (; ')9+ ; $ 42' 792 ;'+' 3 **' 7+=' + : : (/==/ :' 3#' 49/-' "((=2 ' /(' + ' :' 2&' 49/' +11/ "42($=' '+ ; /' 3/ ')` 49+4' 2&' +' & 14 4 2<=' "/(P =2'

7 i - ' ' E

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7 F<" ' J A? F ' =1 @C' E= @' D= ' A' 4>"' ACE@C' F@' J' A1' C ' ' <" (E4> # ' <" ' <! ! 2 ' B= @' C@ @ B@E

7 <! ' "4 < "

7 " ' Y 4"2 ' 0 & ! < ' M"6E "

!"& ! 2<6 & 'H `

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7 Y 4"2 ' 0 & ! < P

F@' D=C ' ?' = %' @] @D ' 7 @AC>@' J F' H = ' F@' @?E' A1' F@' = T @D =? @%' G@C@' ?' F@' F=?EGC ?>' A1' & F @%;' F ' F@C@' G= ' ?A' DCAA1' A1' GFA' GCA @' 7 @AC>@' J F H F@' C@ ' G= ' DC ? @E ' & F @' CA F@C ' G@C@' = @' J =? 1= C@C %' =&E' # =B ' G= ' F@ C' C=B@ @C ' ?' =' @ @C' A' # =B %' & F @' GCA @' 7) A ' A E' EA' '=' >C@= ' @CB @' 1' A ' A E' >@ ' '=' A ' A1' I =?<' E' =?E' E' I ' = JD ' >?@E%' ' F= ' B@' A E' D= ' F@ J ' =G= ' A = A?= ' & @' A E' 1 ' D' F@' = 1 A ? ' A' ' ' "AG' F' J @?' = ' GF F' A C' = JD @ ' = IA ' AG?' GA E' EA' %' AC' =? ' 1C @?E%' I @ = @' G@' ?@B@C' @ ' F@ J ' >A' I= < ' C' ?= J @' ?@@E' ?@B@C' I@' J @? A?@E H ?' =?A F@C' @ @C' & F @' GCA @%' 7 @ ' J @' F=B@' F@' ? A @E' E@?@' F@' 1 C ' ADDAC ? ') A ' A? ' ?@@E' @ ' F@ J ' >?' F@ C' ?= J @ ' = CA ';' ' =?' J =<@' F@ J ' D= T =I @' J @ 1 H ?' =?A F@C' @ @C' & F @' = E%' " & @' G ' =EB @' A ' 1A1' CJ ?>F= J ' ?@] ' * A?E= ' F@' I ' = J @' =1@ ' ' F=B@' ? A @E' A ' =' A ' & F@?' A ' >@ ' FA E' A1' ^= D=C %' @ ' F J ' ?T EAC @' = IA ']' G F' F ' ?= J @%' =?E' =?A F@C']%' =?E' A' A? H & F @' F=E' ?EAC @E' F@' I ' ?' b @ A?' A' * C ' & F= @ %' =?E' # =B ' I @ ?>' F=C>@E' G F' 1AC> ?>' ' =E J @E' F= ' F@' F=E' >A' ' >?@E' I ' =' C=?>@C%' =?E' DCAE @E' F@' = IAB@' @ @C ' A' DCAB@' F ' ??A @? @' @AC>@' J F%' =' EC=D@C' = ' CJ ?>F= J %' DCAB@E' F= ' F@' GACE ' 7 @AC>@' J F' H ?' F@' = @D =? @' G@C@' ?A ' F ' F=?ET GC ?>%' =?E' F= ' F@' F=E' J =E@' ?b C @ ' D@C A?= %' =?E' A E' ?A ' E AB@C' =? ' A F@C' @AC>@' J F%' =' EC=D@C%' ?' CJ ?>F= J %' =?E' F=E' @=C F@E' F@' E C@ AC %' =?E' F@C@' E E' ?A ' =DD@=C' A' I @' =? ' A F@C' @AC ' ' J F%' =' EC=D@ I%' ?' C?= ?>F= J ' ' G= ' AIZ@ @E' F= ' F@C@' G= ' ?A' DCAA1' F= ' F@' ?= J @' G= ' ?A ' GC @?' I ' AJ @' A F@C' @AC>@' J F%' AC' F= ' F@' @AC>@' J F' G= ' ?A ' =?' @] ?>' D@CT A?' ;' =?E' F= ' F@C@' G= ' ?A' 11 @?' @B E@? @' F= ' F@' = @D =? @' G= ' ?A ' F@' = @D =? @' A1' =?A F@C' @AC>@' J F%' = ' CJ ?>F= J ' A <I J %' ' %' 7 ' F ?<' F@C@' ' =' = @' A' >A' A' F@' Z C ' F@C@' ' AJ @' @B E@? @' F= ' F@' @AC>@' J F' GFA' F= ' I @@?' = @E' ' F@' A? ' EC=D@C' A1' F= ' ?= J @' B ?>' = ' CJ ?>F= J ' 1' F@C@' '=?A F@C' @AC>@' J F%' =' EC=D@C%' F@C@%' F@' J >F ' F=B@' I @@?' = @E' = ' =' G ?@ ' 1AC' F@' DC A?@C ' ' =J ' = A' A1' AD ? A?' F= ' F@C@' ' AJ @' @B E@? @' F= ' F@!?= J @' [' @AC>@' J Fn' ' 1 A %' =?E' F= ' F@' = @D =? @' G= ' ?A ' F@' = @D =? @' A1' =' J =?' A1' C=G' >? ?>' F ' C@= ' ?= J @ H 7 3

"N$' /) X' 9 4/ ' G' L ' ' L ' AA I ' 9/' ; 49' 3#' +' "/(=2 '' '2 4' 2&' 49/' '+ ; /' 2&' 6<(#' &2<' :' 49+4' 49/' "(=2 ' /(=')2 4' 49/' ! /2()/' ; 49 ' +' :' 49 =' "(/J/ '4/ :' 49/' +11/ "4+ ' 1/' =) ' / :' '' 49/' '+ ; /' ' ! /2()/ T</=4 2 '' 3/ ')' (/=/(J/ :' 79/49/(' &' +J =

& F@C@' F@' DC A?@C' G= ' ?E @E' 1AC' 1AC> ?>' =?E' @C ?>' =' F@b @' 1AC' ' EC=G?' ?' F@' ?= J @' A1' AF?' & @ A?%' A?' * @ C ' A]' =?E' C@@?GAAE%' =?E' =' @C<' 1CA J ' F@ C' @ =I F J @?' ' = @E' F= ' F@ ' G@C@' I=?<@C ' =?E' =C J ' =>@? %' =?E' F= ' F@C@' G= '?A ' =? ' D@C A?' A1' F@' ?= J @' A1' AF?' & @ A?' F=B ?>' =? ' = A ?' F@C@%' =?E' F= ' F@' F@b @' G= ' DC@ @? @E% A' F J ' =?E' D= J @?' C@1 @E' A?' F= '>CA ?E% =?E' =EE@E' F= ' F@' G= '=' @C<' ?' F@' =C J ' =>@?' E@D=C J @? ;' =?E' F@' A E' ?A ' G@=C' F@' <?@G' F@' ?= J @ ' A1' = ' F@' A J @C ' ?' F@' FA @%' F ' F@' E E' ?A ' <?AG' =? ' A?@' A1' F@' ?= J @' A1' ' & @ A?' ?' F ' E@D=C J @? %' =?E' F= ' F@' F=E' ?b C@E' A1' F@' A F@C' @C< %' =?E' G= ' ?1AC J @E' I ' F@ J ' F1 ' F@C@!G= ' ?A' F' D@C A?' ?' F@' I=?< ?>' E@D=C J @? ;' ' G= ' AIZ@ @E' F= ' F@' '@B E@? @' G= '?A ' 11 @? %' = ' ' G= ' D=C ' F@=C = $ I ' ' G= ' F@ E' F= ' ' G= ' E"!& #'*6 ! ' @B E@? @%' =?E' G= ' 11 @?' A' = ' DA?' F@' DC A?@C' A' F@G' F= ' ?' 1= ' F@C@' G= ' =' ' & @ A?' F=B ?>' =?' = A ?' = ' * @ C ' A]' =?E' C@@?GAAEH ' NRd A' GF@C@' F@' DC A?@C' G= ' ?E @E' 1AC' 1AC> ?>' =?E' @C ?>' =' F@b @' E= @E' = ' 6? >F A?% =?E' D CDAC ?>' A' I@' EC=G?' A?' * @ C ' 5=>@ H' I=?<' = ' @ @ @C' I ' AF?' %' =' @C<' 1CA J ' F= ' d=?<' DCAB@E' F= ' F@' I=?<' F=E' ?A' A J @C' A1' F@' ?= J @' A1' AF?' %' =?E' F= ' F@' <?@G' F@' B =>@' A1' 6? >F A?% GF F' G= ' =IA ' =' J @' 1CA J ' @ @ @C% =?E' F= ' F@C@' G= ' ?A' AF?' ' B ?>' F@C@' GFA' GA E' I@' <@ ' A' F=B@' =?' = A ?' G F' =' I=?<@C;' C= J G@ % %F@ E' F= ' F@C@' G= ' A J @' @B E@? @' A' >A' A' F@' Z C ' F= ' AF?' ' G= '=1'1 A ' D@C A?% 1'3

5CAA1' F= ' F@' DC A?@C% A?' @C ?>' =' ?A @% C@DC@ @? @E' F@' J =<@C' = ' B ?>' = ' =' D=C =C' D = @' =?E' ?' =' D=C =C' ?@' A1' I ?@ % G F' @B E@? @' F= ' ' ' ?A ' F= ' D@C A?H ' ?A @% ' 1T 1 @?' A' DCAB@' ' =L' 1AC>@C '' 1' F@' DC A?@C' I@' F@' D= @@' A1' F@' ?A @';' =?E' DCAA1' F= ' F@C@' ' =?A F@C' D@C A?' A1' F= ' ?= J @' ?' =' E 11@C@?' ?@' A1' I ?@ ' G ' ?A ' J =<@' ' ?@ @ =C ' A' DCAB@' F= ' ' G= ' ?A ' F= ' D@C A?H ' ?A @ ' F@' DC A?@C' G= ' ?E @E' 1AC' 1AC> ?>' =?E' @C ?>' =' DCA?Z AC ' ?A @' D CDAC ?>' A' I@' EC=G?' I ' & ' A =?E% D= =I @' A' F@' DC A?@C' AC' F ' ACE@C' F@' DC A?@C' A E' F@' D@C A?% A' GFA J ' F@' @C@E' F@' ?A @% F= ' ' G= ' EC=G?' I ' & ' A =?E% GFA' <@D ' F@' H' @=E' = ' D A?% GFA' G= ' =' C@ D@ =I @' J =?' F@' ?A @' G= ' E FA?A C@E';' =?E' F@' DC A?@C% A?' I@ ?>' ?1AC J @E' I ' F@' DCA @ AC' F= ' A =?E' = E' F@' <?@G' ?A F ?>' A1' F@' ?A @% = E%!' A@ ' ?A ' F@' V ' G ' @ ' F J ' @@' F= H A =?E' DCAB@E' F= ' I@' <@D ' F@' H' @=E' = ' D A?;' F= ' F@' ?A @' G= ' ?A ' J =E@' I ' F J %' AC' I ' F ' ACE@C% AC' G F' F ' <?AG @E>@% =?E ' F@C@' G= ' ?A' A F@C' D I =?' A1' F ' ?= J @' = ' D A?;' I ' F@C@' G= ' =' >@? @ J =?' A1' F@' = J @' ?= J @' B ?>' F@C@' A?' F ' J @=? % G CA' 1AC' E ? A?' G= ' = @E' >@? @ J =?' A =?E ' DA?' F ' @B E@? @' ' G= ' AIZ@ @E% ' F ' ' F@C@' G= ' ?A' @B E@? @' A1' F@' ?A @' I@ ?>' 1AC>@E;' F@' E@ C D A?' A1 ' F@' J =<@C' =DD @E' = ' @]= ' A' F@' @ A?E' = ' A' F@' 1 C ' & ' A =?E ' -?E ' "A' @B E@? @' F= M= ' F@' J @' A1' F@' @C ?>' F@' DC A?@C' <?@G' A =?E' A1' F@' H' @=E

J : / ' 1/' 49+4' 49/ (/' 7+=' ' 2 ' =<19' 1<=42 ; /(' 2&' +' 3+ ' 0

(22&49+4' 49/' "(=2 ' /(' (/P "(/=/ ' 4/ :' 49/' ; +0/(' 2&' +' ' 24/' +=' * J ')' +4' +' "+(4 1<*+(' "*+1/ ' +' :' ' +' "+(4 1<*+(' * ' /' 2& 3<= ' ' ' /==' 7 49' / J P : / ' 1/' 49+4' 4' =' ' 24 49+4' "/(=2 ' S=' ' 24/

)24' 49/') / ' < ' /' +21/"4+ ' 12' 2&' +' ! /2()/' ' 49 ' +' :' 49/' "(=2 ' /(=' 12 ' J/(4/ :' 4' ' 42' 49/' = ; <*+4/ :' +11/"4+ ' 1/' 2&' + ' 249/(' ! /2()/' ; 49 ' +' : (+"/(' +4' (; ') 9+ ; ' 7 49' 49/' &(+<: <*/ ' 4' ' 4/ ' 4 2 ' '2&' ' : <1 ') ' 492=/' 42' 792 ; ' 49/' 3 *#' 7+=' ' : 2(=/ :' 42' =<" "2=/' 49+4' 4' 7+=' 49/') / ' < ' /' +11/"4P

+ ' 1/' 2&' 49+4' ' ; 49 ' 49/' "(=2((2=' 7/(/')< *4#' 2&' &2()/ #Q+' "2 ' 4' 1*/+(*#' =/44*/ :' 3#' 49/' 1+=/=' & ! ' " ' YH. ' ' ??3' /V' ' (+ ' ' +' ' Y' ' ' ' HGY' +(0' ' ' ' +44/=2 ' ' ' +' :' ! <(' /#'

W#B /) ' ' =93#' G L' ' L' AYM

?A ' A' I@' F@' J =<@C' A1' F@' ?A @ ' 9CE ' DDA ?>' F J ' A' F=B@' F=E' F' <?AG @E>@% B@CI = ' J C@DC@ @? = A?' E E' ?A ' = JA ?' A' 1AC>@C ' : F ' DDA ?>' F' J C@DC@ @? = A?' A E' = JA ?' A' 1AC>@C % F= ' G= ' ?A ' F@' A11@? @' A1' GF F' F@' G= ' A?B @E% 183' F ' A1' @C ?>' F@' ?A @' <?AG ?>' ' A' I@' 1AC>@E% GF F' J D @E' = DC@B A ' = ' A1' 1AC>@C ' F@C@1AC@% F@' 1AC>@C ' G= ' ?A ' A?T J J = @E' ? ' F@' C@DC@ @? = A?' G= ' J<E@% F@' A11@? @' A1' @C ?>% GF F' J ' F@' I @b @? % G= ' ?@B@C' AJ J @E ' F@' Z C ' 1A ?E' F@' DC A?@C' > ' A1' @C ?>' F@' ?A @' <?AG ?>' ' A' I@' 1AC>@E% =?E' = E' F@ ' G@C@' = 1 1@E' F= ' GF@?' F@' DC A?@C' C@T DC@ @? @E' ' A' F@' !F@' ?A @' A1' A =?E' A1' F@' H' @=E% F@' <?@G' ' G= ' ?A ' F ' ?A @ ' ?E% DA?' =' = @' C@ @CB@E% F@'Z E>@ ' F@ E' F= % = ' F@' DC A?@C' F=E' = @E' F= ' & ' A =?E' A1' F@' H' @=E' G= ' F@' J =<@C% =?E' 1CA J ' I @ ?>' D= @@' A1' F@' ?A @' F@' J ' F=B@' < AG?' F@' D=C = H% ' G= ' 11 @? ' 1AC' F@' DCA @ AC' A' F@G' ' G= ' ?A ' F@' ?A @' A1' F= ' & ' A =?E' ; =?E' ' = ' A?' F@' DC A?@C' A' DCAB@' ' F@' >@? ?@' ?A @' A1' =?A F@C' & ' A =?E% 1' ' G@ H@' A ' 163' 7

&49/')< *4# 0'27*/ :)/ ' F= ' I @@?' = C@=E ' AI @CB@E% F= ' F@' D I = A?' A1' F@' 1AC>@E' ? C J @? % G F' <?AG @E>@' A1' F@' 1= % ' J =E@' =' I =? B@' A11@? @% I ' JA ' A1' F@' = @ ' GF F' C@ = @' A' 1AC>@C ; 1:3 =?E' ?' = @ ' A1' F ' < ?E' F@' <?AG @E>@' A1' F@' 1= % AC% = ' ' ' 1C@T b @? ' @CJ @E% F@' 2>! '' 45 #2 ' I@ AJ @ ' =' J = @C = ' D=C ' A1' F@' @B E@? @

DA?' =?' ?E J @? ' 1AC' @C ?>' =' 1AC>@E' F=?<' ?A @% <?AG ?> ' A' F@' 1AC>@E% @B E@? @' J = ' F@' > B@?' A1' A F@C' 1AC>@E' ?A @ ' F=B ?>' I@@?' @C@E' I ' F@' DC A?@C% ?' ACE@C' A' F@G' F ' <?AG @E>@' A1' F@' 1AC>@C % N d' ' A' F % @@' BA ' % B E@? @% AA<' B ' ' -% ' - '

49/(' &2() / (/=' 2'' 49/' =+ ; /' 3+'0 A' ?' =' = @' GF@C@' F@' DC A?@C' G= ' ?E @E' 1AC' 1AC> ?>' =?E' 1AC' @C ?>' G F' > ' <?AG @E>@' =' F ' @1' @] F=?>@% D CDAC ?>' A' F@' EC=G?' DA?' =' @C = ?' I=?< ?> FA @% ' G= ' F@ E' F= ' A F@C' 1A X>@E' F ' DA?' F@' =J @' FA @% GF F' G@C@' 1A ?E' DA?' F@' DC A?@C' = ' F@' J @' A1' F ' =DDC@F@? A?% G@C@' =E J I @' = ' @B T E@? @' A1' > ' <?AG @E>@ ' N _d

"2 '' +' = ; *+(' : 14 ; /' 4 /J : / ' 1/' =' + : P ; == 3*/' 2& 49/' "(=2 ' /(9+J ')' =2 ; /' 4 ; /' 3/&2(/' <44/ (/ :' + ' P 249/(' &2() / :' ' 24/' 2& 49/' =+ ; /' ; +' <P &+14<(/' ? +' :' ' +*=2' 2& +' ' < ; 3/(' 2& 249/(=' 9+J ')' 3/ / '' '' 1 (1<P *+4 2'' 79 19' 7 / (/' 2& 49/' =+ ; /' ; +' <P &+14<(/ ' 7 49 ?' =' I @b @? ' = @% F@' DC A?@C' G= ' = A' ?E @E' 1G' E T DA ?>' A1' =?E' D ?>' =G= ' =' 1AC>@E' I =?<' ?A @% GF F' D J DAC @E' A' I@' =' D !A J AC ' ?A @' A1' F@' AB@C?AC' =?E' A J D=? ' A1' F@' =?<' A1' ?> =?E% 4 ! 2' < ' 6& ' 4' : ' *4"2 # ' @=C' DCAA1' G= ' =EE @E% F= ' F@' ?A @' ?' b @ A?' G= ' 1AC>@E% =?E' F= ' ' F=E' I@@?' @C@E' I ' F@' DC A?@C' = ' = ' A C?% A?' F@' . F' A1' ?@% 9 .% A' F= ' F@' A? ' C@ J = ? ?>' b @ A?' G= % = ' A' F ' 2>! '' 45 #2 ' 4*' F@' 1AC>@C ' A' @ =I F' F % @B E@? @' G= ' =ET J @E% F= ' A?' F@' - F' A1' * =C F' DC@ @E ?>% F@' F=E' D= @E' A11' =' =?<' A1' ?> =FE' ?A @' <@G @' 1AC>@E%% =?E' A1' F@' =J @' J =? 1= C@% =?E' F= ' F@C@' F=E' I@@?' D= E' ? A' F@' =?<' A1' ?> =?E' B=C A ' 1AC>@E' ?A @ % E= @E' I @ G@@?' # @ @ J I@C' 9 ' =?E' * =C F' 9 .% = ' A1' F@' =J @' J =? 1= C@% =?E' F=B ?>' E 11@C@?' ?EAC @ J @? ' DA?' F@ J % ?' F@' F=?EGC ?>' A1' F@' DC A?@C ' ' <@G @' =DD@=C@E% F= ' GF@?' F@' G= ' =DDC@F@?E@E' F@' F=E' ?' F

W ' 9 =' =// ; =' +' ' =4+0/ ' 9/]36/24 2 '' 3/ ')' 4+0/ '' 3/&2(/' J/ (; 14 R B /V' +' + ; "42 '' ' ' ' ' ' ' GAA

WYB J .' "' Y.E W1B ' ' #* / ' .' /7 ' ' NG ?' G' /+19' NEH' J2*' .' "' GHH " B /V' 2<) 9 ' ' ' .GM

DA @ A?D=D@C=?E J D @ J @? 1 1AC J =< ?>?A @ A1 F@ =J@ < ?E = FA @ DCAE @E F@ DC A?@C G= 1A ?E > I @? @? @ G= C@ D @E 1AC F@ D CDA @ A1 =< ?>? F@ AD ? A? A1 F@ G@ B@ Z E>@ = A F@ =E J I A1 F @B E@? @ F@ G@C@ A1 AD ? A? F= G= =E J I @; A DCAB@ F@ <?AG @E>@ A1 F@ DC A?@C F= F@ ?A @ G= 1AC>@E4 =?E F= @B@C F ?> GF F F@ = E AC E E G= DCID@C A I@ =E J @E A F@G F <?AG @E>@ A1 F@ 1AC>@C N@d

4* f "(=2 / (S+ 9+ : 7(4) 2 49/ 3+10 2 49/ ;

?A =@C = @ GF@C@ F@ DC A?@C G= ?E @E 1AC 1AC> ?> = DCAJ AC ?A @ N?A =?A @ A F@ =?<A1 ?> =?Ed =?E = A 1AC @C ?> @ B E@? @ G= > B@?> F= ?> F@ =J@ DA <@ IAA< I@ A?> ?> A F@ DC A?@C ?GF F F@ 1AC>@E ?A @ G= 1A ?E A?> GF F F@ ?E J@? DCA @@E@E F@C@ G= = A 1A ?E =?A F@C DCAJ AC ?A @ 1AC D= =I @ A F@ DC A?@C AC ACE@C =DD@=C ?> A I@ >?@E I A?@ & J =DD@C GF F & J =DD@C DCAB@E ?A A I@ F =?EGC ?> =?E F= F@ ?@B@C AG@E F@ DC A?@C F @B E@? @ A1 =DD@CH ?A @ G= AIZ@ @E A I F@ DC A?@CH A ? @ I 1 F@ Z E>@ C@ @ B@E F@ @B E@? @ N Md & F@C@ ?' ACE@C A F@G' > <?AG @E>@ F@ DCA @ AC G F@E A DCAB@ Fp @C ?> A1 =?A F@C 1AC>@E ?A @ *! , 6* " F@ @C ?> GF F G= F@ IZ@ A1 F@ ?E J@? =?E G= AIZ@ @E F= A? DC@B A = A E F@G >4 6 !& 4 F@ F ?> G= EA?@ G= F@ E F= F@ @B E@? @ G= ?A =E J I @ ? @ F@ = @C @C ?> G= ?' AJ@ G= A??@ @E G F F@ DC ? D= = @ AC N E I@ F@G?' F= < 4 5 " 4 * < 6& & 6 >*6 >" 123 ?' =' J AC@ C@ @? = @ A1 @C ?> =' 1AC>@E = @D =? @ G @C@ 1AC F@ D CDA @ A1 DCAB ?> > <?AG @E>@ G= DCADA @E A > B@ ?' @B E@? @ A F@C 1AC>@E I DC@ @ J =C G F F@ =VJ@ EC=G@C H =?E = @D AC H'?=J@ , f D= @E 6 & 4 < 6* " F@ @C ?> ?' b @ A?$ C = @ @@ =1 @C A? ?> F@ ACE @ B E@? @ A I@ C@ @ B@E =?E C@ @CB@ F@ DA ? GF@?' F@ A ? @ 1AC F@ DCA @ A?' E@ ?@E A DC@ F@ @B E@? @ N d

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W Id /)’ ’ :7+(:=’E’ 2V’ ’ ’EN’ W Id 3 : " B /)’]’ +*4’H’L’ ’ ’EH.’ 2& "CB /)’ · +10=2’’ E’ 2V’ ’ ’EN’ +’= ’)*/’:+4/’ =’) J/’’ 2&’+’#’3 **?’’49 =’ W]b) * /)’ ,’ 9 ** "=’H’ 0.’M’ ’EE’ (/"2(4’ //’ 2<"/** &’ +7=’H’L’ ’L’ * /’ 12<’=/*’&2(’49/’1(27’’927/J/(’:’ DE.6’79/(/’=<’:(#&2()/:’://:=+’:’7 **=’ ’2&) J/’49/’/J :/’1/ 7/(/’2 ; 44/:’ ’’/J :/’1/

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Z 49/(’ ‘24/=’ ‘<=4’3/’ "(2J/ 6 ,42’ 3/’ &2()/ :

‘ 1’ F@’ DA @ A?’ A1’ A F@C’ 1AC>@E’ ? C J @? ‘ ‘ A11@C@E’ ?’ @B E@? @’ A’ DCAB@’ =’ > ‘ <?AG @E>@ %’ F@C@’ J ‘ I@’ C@> =C’ @B E@? @’ F= ‘ F’ ? C J @? ‘ =C@’ 1AC>@E%’=?E’ DCAA1’ F= ‘ F@’ DC A?@C’ C@ C?@E’ F@’ J A?@ ‘ A?’=? ‘ F’ ? C J @? ‘ =?E’ C@ @ B@E’ F@’ ? C J @? ‘ I= <’ =>= ?%’ ‘ ?A ‘ 11 @? ‘ G FA ‘ DCAE ?>’ F@’ ? C J @? %’ AC’ E ‘ = A ? ?>’ 1AC’ ‘ ?A? DCAE A? ‘ NGd

’ &2(; /(’ <44/(’)’ 2& +’ =<""2=/ :’ ’ 24/ ’ 79 19’ 9+=’ 3//44 : /=4(2#/ : ’ + ’ :’ =’ ’ 24’ "(2J/ :’ :2’ 9+J/’ 3 &2()/ :

DA?’ =?’ ?E J @? ‘ 1AC’ @C ?>’ 6* 4 ‘ ?A @%’ ‘ =DD@=C@E’ F= ‘ A?’ =’ 1AC J @C’ A = A?’ F@’ DC A?@C’ F=E’ D= E’ =G= ‘ =’ ‘ ?A @%’ F= ‘ F@’ GA J E?’ A’ GFA J ‘ F@’ D= E’ %’ A?’ 1 ?E ?>’ ‘ A’ I@’ I=E%’ @? ‘ GACE’ A1’ ‘ A’ F@’ I=CC= < %’ GF@ H@ DA?’ F@’ DC A?@C%’= A J D=? @E’ I ‘A?@’ A1’ F@’ @ Z@=? ‘@ 1’ F@’ C@> J @? %’ =J @’ A ‘ F@’ GA J =?H ‘ FA @’ A’ = <’ 1AC’ F@’ ?A @%’ =?E’ A’ > B@’ >AAE’ J A?@ ‘ ?’ @] F=?>@’ 1AC’ ‘ F@ ‘ 1A ?E%’ FAG@B@C%’ F= ‘ F@’ GA J =?’ F=E’ > B@?’ F@’ ?A @’ A’ F@’ A? =I @%’ GFA J ‘ F@ ‘ J J @E = @ ‘ @? ‘ 1AC ; F@’ A? = :d @%’ FAG@B@C%’ E E’ ?A ‘ A J @’ A’ F@ J %’ =?E’ F@’ @CZ@=? ‘ =?E’ F@’ DC A?@C’ G@C@’ A I >@E’ A’ C@ C?’ A’ F@’ I=CC= < ‘ G FA ‘ @@ ?>’ F J ‘ ‘ I@1AC@’ F@ ‘ G@? ‘ =G= %’ F@ ‘ @1 ‘ GA’ F= 1’ AB@C@ >? ‘ A’ J =<@’ >AAE’ F@’ E@I ‘ AA?’ =1 @C’ F@ ‘ G@C@’ >A?@%’ F@’ A? =I @’ =J @’ ?%’ =?E’ 1 ?E ?>’ F= ‘ F@’ GA J =?’ G= ‘ = 1 @E’ = ‘ A’ F@C’ J A?@ %’ F@’D ‘ F@’?A @’ ? A’ F@’1 C@’ & F@?’ F@’ 1= ‘ C@ = ?>’ A’ F@’ @C ?>’ F@’ ‘ ?A @’ F=E’ I@@?’ >A?@’ FCA >F%’ F@’ A ? @’ 1AC’ F@’ DCA @ A?’ G= ‘ IA ‘ A’ DCAB@’ F@ @’ 1= ‘ C@ D@ ?>’ F@’ ?A @’ %’ = ‘ @ %’ %’ ? @CDA @E%’ =?E @] DC@ @E’ =’ CA?>’ EA I ‘ GF@ F@C’ F@ ‘ G@C@’ =E J I @%’ ?A’ @B E@? @’ F=B ?>’ I@@?’ > B@?’ A1’ F@’ ?A @’ I@ ?>’ =’ 1AC>@E’ ?A @%’ =?E’ F@’ ?A @’ @ 1’ ?A ‘ I@ ?>’ DCAE @E’ F@%’ FAG@B@C%’ A? @? @E’ A’ C@ @ B@’ F@’ @B E@? @%’ = ?>’ F= %’ 1’ F@’ DC A?@C’ FA E’ I@’ A?B @E%’ F@’ GA E’ C@ @CB@’ F@’ DA ? ‘ 1AC’ F@’ AD ? A?’ A1’ F@’ Z E>@ %’ 1’3

4+4/ ; / ‘ 4=’ &4" :

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W 4b’ /V’ KX **+(: ’ ’ ’ ’ GIA’ //’ ’ ‘ 22(/ ’ .’ L ’ ’ L ’ DH

"&B’ 9 ** "=S 1+=/ ’ .’ /7 ’ .MA’ 9/’ (/=<*’ 2& 49/’ 1+=/’ =’ ’ 24’ =4+4/ : ’ 9<4’ 4’ =’ =+ :’ 49+4’ 49/’ */+(’ / :’ 6< :) /’ =<3=/T</ ’ 4*#’ /V"(/==/ :’ 49/’ &2**27 ’)’ 2" ’ 2 ’’ ’ 0 9+4’ 49/’ "(2=/1<42(’ 12<*:’ ’ 24’) J/’ "’ /J : / ’ 1/’ + ’ #49 ’)’ 49+4’ 7+=’ =+ :’ 3# 49/’ "(=2 ’ /(’ +4’ +’ 4 ; /’ 22**+4/ +’ 42’ +’ &2(; /(’ <44/(’)

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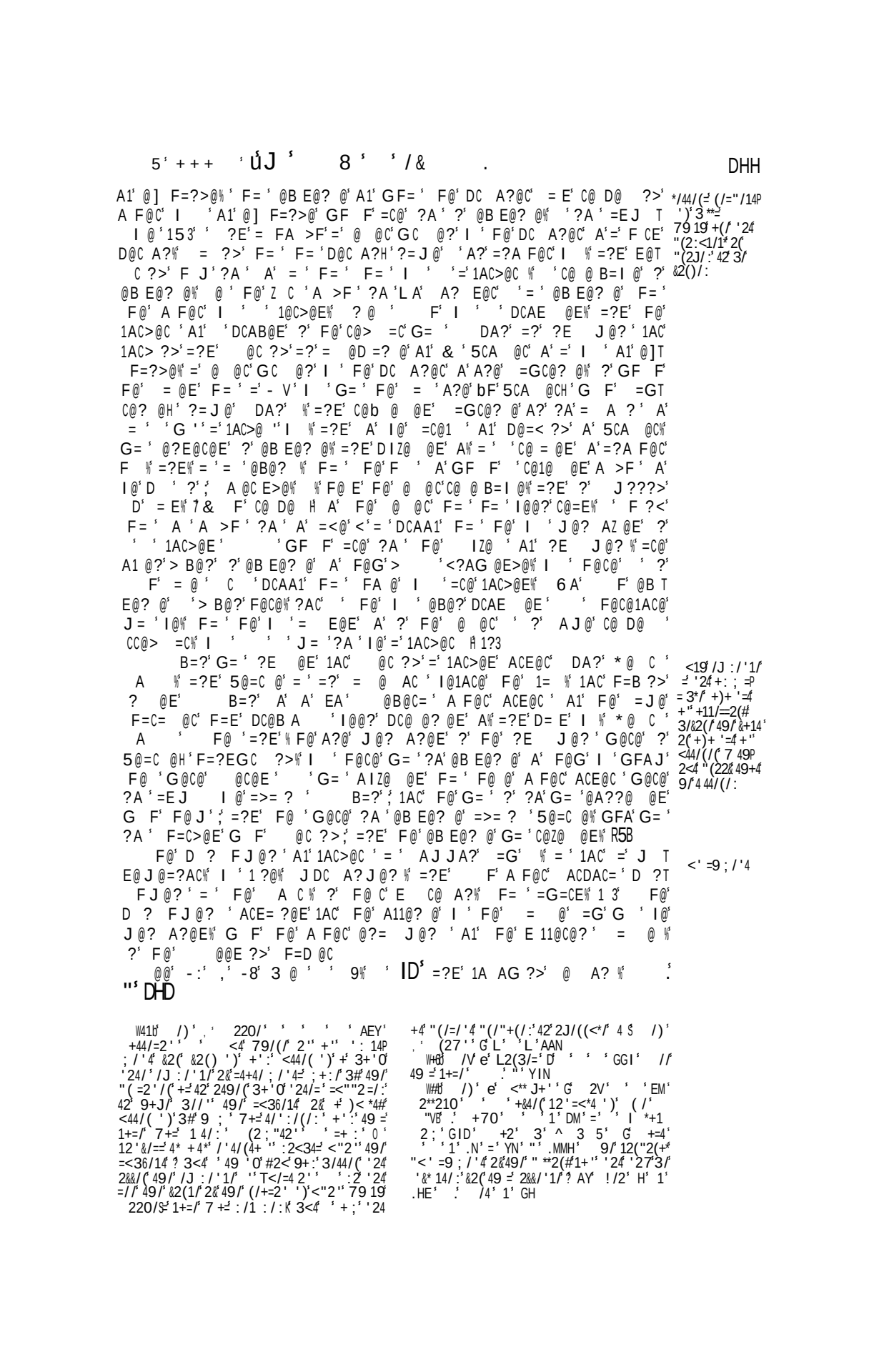

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F@‘DC ? D=’ = @ ’C@ = ?>‘ A‘ F@‘ C J@‘A1‘1AC>@C ’F=B ?>‘ I@@?‘ A? A E= @E‘ I ’ F@’ - :’ ,’ -8‘ 3 @ ’ ’ 9% GF F‘ A? = ? ’ >@?@C=’ DCAB A? ’ =DD =I @‘ A‘ = ’ F@‘ A11@? @ ’ =11@ @E‘ I ’ F= ’ % ’ ’ FA >F ’ @] D@E @? ’ A‘ ? CAE @‘ FA @‘ DCAB A? ’ ?‘ F ’ D = @% ?‘ ACE@C‘ F= ’ F@ ’ J = ’ I @‘ J AC@‘ C@=E ’C@1@CC@E‘ A‘ ?‘ F@‘ I @b @?’ F=D @C

@ ’ 9% = ’ A‘ E@ J =?E ?>‘ DCAD@C ’DA?‘ 1AC>@E‘ ? C J@? % G ’ I@‘ 1A ?E‘ ?A @E‘ E4 ’ F=D ’ :

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’ F@‘ - :’ ,’ -8‘ 3 @ % % 9% ’ : % 7GF@C@‘ F@‘ 1AC> ?>‘ AC‘ = @C ?>‘ =? ’GC ?>‘ AC‘ J = @C‘ GF= A@B@C% AC‘ F@‘ A11@C ?>% @C ?>% E DA ?>‘ % A1% AC‘ D ?>‘ A11‘ =? ’GC ?>‘ AC‘ J = @C‘ GF= A@B@C% <?AG ?>‘ F@‘ = J u‘ A‘ I @‘ 1AC>@E‘ AC‘ = @C@E% ’ ?‘ F ’ Z ’ @] DC@ @E‘ A‘ I @‘ =?‘ A11@? @% 1‘ =? ’ D@C A?‘ F= % ?‘ ?> =?E‘ AC‘ C@ =?E% 1AC>@‘ AC‘ = @C% AC‘ A11@C% @C% E DA @‘ A1% AC‘ D ’ A11% <?AG ?>‘ F@‘ = J @‘ A‘ I @‘ 1AC>@E‘ AC‘ = @ H@E% =? ’ F‘ G ?>‘ AC‘ J = @C‘ ?‘ GF= A@B@C‘ D = @‘ AC‘ A ? C ’ A ’A1‘ ?> =?E‘ =?E‘ C@ =?E% GF@ F@C‘ ?E@C‘ @% @‘ EA J ? A?‘ A1‘ @C‘ * =Z@ ’AC‘ ?A % F‘ GC ?>‘ AC‘ J = @C‘ J = ’D CDAC ’ A‘ F@‘ J =E@‘ AC‘ J = ’F=B@‘ I@@?‘ J =E@% =?E‘ ?‘ GF= @B@C‘ =?> =>@‘ F@‘ =J @‘ AC‘ =? ’ D=C ’ F@C@A1‘ J = ’ I @‘ @] DC@ @E% @B@C ’ F‘ D@C A?% =?E‘ @B@C ’D@C A?‘ = E ?>% =I @ ?>% AC‘ A ? @ ?>‘ F‘ D@C A?% F= ’ I @‘ E@@ J @E‘ A‘ I @‘ =?‘ A11@?E@C‘ G F ?‘ F@‘ J @=? ?>‘ A1‘ F ’ % =?E‘ F= ’ I @‘ D ? F=I @‘ F@C@I ’ ?‘ F@‘ =J @‘ J =??@C‘ = ’ 1‘ F@‘ GC ?>‘ AC‘ J = @C‘ F=E‘ D CT DAC @E‘ A‘ I @‘ J =E@‘ AC‘ F=E‘ I @@?‘ J =E@‘ ?‘ ?> =?E‘ AC‘ C@ =?E‘ 1‘ =? ’ D@C A?‘ F= ’ ?‘ ?> =?E‘ AC‘ C@ =?E‘ 1AC>@‘ AC‘ = @C% AC‘ A11@C% @C% E DA @‘ A1% AC‘ D ’ A11% <?AG ?>‘ F@‘ = J @‘ A‘ I @‘ 1AC>@E‘ AC‘ = @C@E% =? ’ I ’ A1‘ @] F=?>@% AC‘ =? ’ DCA J AC ’ ?A @‘ 1AC‘ F@‘ D= J @? ’ A1‘ J A?@ % AC‘ =? ’ ?EAC @ J @? ’ A?‘ AC‘ = >? J @? ’ A1‘ =? ’ I ’ AZX@] F=?>@‘ AC‘ DCA J AC ’ ?A @‘ 1AC‘ F@‘ D= J @? ’ A1‘ J A?@ % AC‘ =? ’ = @D =? @‘ RM1‘ =? ’ F ’ A1‘ @] F=?>@% AC‘ =? ’ ?E@C =< ?>% G=?!=? % ACE@C% 6> <40 "! ’ ’ 4"‘ " > ’ 1AC‘ F@‘ D= J @? ’ A1‘ J A?@ % AC‘ *4"‘ < ’ # ! "’ ’ 4"‘ "6 * "‘ 4 *‘ 6 ’ ’ 244# ’ 4"‘ >"! ’ ’ AC‘ =? ’ E@@E% IA?E% AC‘ GC ?>‘ A I >= AC ’ 1AC‘ F@‘ D= J @? ’ A1‘ J A?@ ’ NGF@ F@C‘ F‘ E@@E% IA?E% AC‘ GC ?>‘ A I >= AC ’ F= ’ I @‘ J =E@‘ A? ’ 1AC‘ F@‘ D= J @? ’ A1‘ J A?@ % AC‘ 1AC‘ F@‘ D= J @? ’ A1‘ J A?@ ’ A>@ F@C‘ G F‘ A J @‘ A F@C‘ D CDA @d% AC‘ ’ ’ !"&4" & ’ 4 ’ 4"‘ 6 !2 & ’ 4 *‘ 6 ’ ’ > <‘ > # " 6 # 2 ’ 5 6 ""6 ’ 4"# " ’ 6> <4"! ’ ’ " > ’ # # ’ :4 # ’ 4"‘ 5 "! ! 2 ’ 4 : !260 4"’ ’ ?‘ GF= A@B@C‘ D = @‘ AC‘ A ? C ’ A ’ A1‘ ?> =?E‘ =?E‘ C@ =?E% GF@ F@C‘ J E@C‘ F@‘ EA J ? A?‘ A1‘ @C‘ * =Z@ ’AC‘ ?A % F@‘ J A?@ ’D= T =I @‘ AC‘ @ C@E‘ I ’ F‘ I % ?A @% ?E@C =< ?>% G=CC=? % ACE@C% 6> <4"! ’ ’ " > ’ E@@E% IA?E% AC‘ GC ?>‘ A I >= AC ’ J = ’ I @‘ AC‘ J = ’ D CDAC ’ A‘ I @‘ D= =I @% =?E‘ ?‘ GF= @B@C‘ =?> =>@‘ F@‘ =J @‘ C@ D@

/ ; +’ : ’)‘ "(2"/(4# <"2 ’‘ &2() / :‘ <=4(44 ’ ; /34= L2() ’) ‘ 1 ‘ ’=4(< ; / ’4=‘ ; / ’4 2 ’ / :‘ ’‘ &2(; /(14=’ L2() ’) ‘ ^11 ‘ ’‘ ’) *+ ’ :‘ "((/*+’ :‘ :21<[; / ’4=‘ " < ’ " 4 ’) 42‘ 3/‘ ; +: / ’ 2(+14<+**#‘ ; +: / ’ 2<4 2& ’) P *+ ’ :‘ +’ :‘ (/ ’ *+" :‘ ? &2() ’) ‘ ’ ’‘ <)4‘ *+ ’ :‘ 2((/P *+ ’ : ’ 3 **=‘ 2& /V19+ ’) / ’ 2 ’ "<("2(4 ’) ‘ 42‘ 3/‘ "+#+3*/‘ 2<4 2& ’) *+ ’ :‘ 2((/*+’ :

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@ : 7 1=? D@!A?F= AJJ =? A11@?@=>= ? F =@ AC F= AJJ =? A11@?@A11AC> ?>AC = @C ?>=? J= @C GF= T A@B@C AC A1 A11@C ?>= @C >= E DA ?>A1 AC D ?>A11=? J= @C GF= A@B@C <?AG ?>F@ =J@ A F@ 1AC>@E AC = @C@E GF@ F@C F@A11@?@?=? F = @F= I@!?E =I@=AJJA?=G AC I B C @ L1=? D= @E AC A I@D= @E @B@C F A11@?E@C J= I@E@= G F ?E @E C @E =?E D ? F@E ?=? A ? AC D = @?=?E @B@C = @ AC I@1AC@AC =1 @C F@1= A=? F A11@?@1F@ =J@I@=1@A? =?E @B@ D@C A?= E ?>= I@ ?>= AC A ? @ ?> F@ AJJ A?A1=? F A11@?@1F@ =J@F@=JE@J@=?AC J= I@E@= G F ?E @E C @E =?E D ? F@E ?=? A ? AC D = @J 5<! < < <6 < 6EE" < # #4"< ! > 4#' ?F@ =J@J=??@C ?= C@ D@ = 1F A11@?@=?E F@A11@?@A1F DC ? D= F=E I@@?= = AJJ @E ?F A ? AC D = @"

@ :-?A @E6 D 8 DCAB E@ 1AC F@E@ C D A?? F@ ?E J@?A1F@ ? C J@?= @>@E A F=B@I@@?1AC>@E

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R B 9=1*+<=/=4+0/ &(2 ;49/ ** I M YY =HM +: /V4/ : /:42 (/*+ : 9/72(:= 4+*1=+(/ 4(2P :<1/: 42 ; +0/49=1*+<=/12((/="2 : 7 49 49/249/(" "+(4=2&49/ 14 4 7+= 9/*: (/*+ : 49+4&2()) +" :2(=/P ; /4 (/*+ : 2" +3** :(+7 ; /(1+2"+"/(=2 (/*+ : +: +#P +3*/ (/*+ : 7+=7 49 "49/ (=9 14 EN ! /2/ H 1 YH /) X 23/(4= D 2V IGG WY 9=1*+<=/=4+0/ &(2 ;49/ ** I 1 YY =GI +: /V4/ : /:42 (/*+ :

9/&27 /(1*+<=/"(2J : /:49+4 49p 2&&/1/ ;)94 03/*+ : +: 19+()/:42 9+J/3// 12 ; ; 44/:$ +"/#12 4# 2("*+1/79/(/49/2&&/ : /(7+=+"(/9/ : /: 2(1<=42:#9=(2J=2 7+= (/ : /(/ :<=/*/=3# 49/ . A /4 1

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9/&2(; /(1*+<=/ ; +: /49/+11/==2(/= + : /(= +: +3/442(= 4(+3*/ +"*+1/ 79/(/49/"(1 "+ 7+= 4(+3*/?3<4 1+=/= 2& &2()/(# ;)94 211<(79/(/49/ "(1 "+9+: 24 3// +""(/9/ : /: +: 79/(/ 2 "(22& 12<*: 3/) J/ 2& +# "*+1/ 79/(/9/ 72<*: 3/ 4(+3*/ +: 49/(/&2(/49/*+44/("+(4 2& 49/ 1*+<=/ 7+= +== ; *+4/: 42 49/ &2(; /("+(4 3# =<3=4 4<4)49/ 72(:= 0 79 19 9/=9+* 3/ +""(/9/ : /: 2(3/ 1<=42:#$ = 42 49/"(21// :)= +) +=4 +11/==2(/=) / /(+* =/ J2* . " .AY 0

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@ ' : :% I ' G I I'=?' ? @? ' A' E@1C= E' D=C =C' D@C A? ' ?@@E' ?A ' I@' = @>@E' AC' DCAB@E% G ' I@'1A ?E'6 ' D' . 8

@@ ' :8 ' 7 & F@C@' F@'F=B ?>'=? ' J = @C' ?' F@' AE ' AC' DA T @ A?' A1' =? ' D@C A?' ' ?' F ' ' @]DC@ @E' A' I@'=?' A11@? @% 1' =? ' D@C A?' F= ' F=B@' =? ' F' J = @C' ?' F ' D@C A?=' AE ' AC' DA @ A?%4"' <6 ' "!45(2 '6 #'5! *> ''<6" '6 ' > <'>!6 "' ! ' < '6 >6 ' > 4#''4"'E4 !4 '4*'6 ''4 "' E " 4 ' AC' F= ' <?AG ?> '=?E'G 1 'F=B@'=? ' F' J = @C' ?'=? 'EG@ ?> FA @' AC' A F@C' I E ?>% AE> ?>% =D= ! J@? % 1 @ E% AC' A F@C' D = @% AD@?' AC' ? A @E% GF@ F@C' I@ A?> ?>' A' AC' A Z D @E' I ' F J @ 1' AC' ?A % =?E' GF@ F@C' F' J = @C' F= ' I@' A' F=E' 1AC' F 'AG?' @' AC' 1AC' F@' @' AC' I@?@1 ' A1'=?A F@C''FB@C ' F' D@C A?' F= FI ' E@@J@E'=?E' =<@?' A' F=B@' F' J = @C' ?' F ' AE ' AC' DA @ A?' G F ?' < ' J@=?T ?>'A1' F ' Ḧ1#3

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@ ' : ' 7 1' ' F= ' I@' J=E@' A' =DD@=C% I ' ?1AC J= A?' A?' 46 <' AC' =11 C J= A?' I@1AC@'='Z @' A1' F@' D@= @% F=' F@C@' 'C@= A?=I @' = @' A' I@ @B@' F=' =? ' D@C A?' F= ' ?' F ' AE ' AC' DA @ A?% G FA ' =G1 ' = FAC 'AC'@] @% = Z '?A @' AC' I 'A1' F@' AB@C?AC' =?E' AJD=? ' A1' F@' =?<' A1' ?> =?E' AC' C@ =?E% 4"'4*'6 '' <4#'' 4"E4"6 ' 4&E6 ' ' 4"' E " 4 ' 6""'! 2' 4 ' < ' :> ! ' 4*' :6 " ' AC' =? ' 1C=J@% JA E% AC' JD @J@? ' 1AC' J=< ?>' D=D@C' ?' J = A?' A1' F@' D=D@C' @E' 1AC' F' ?A @ ' AC' I % AC' =? ' F' D=D@C% AC' =? ' D = @% GAAE% A?@% AC' A F@C' J= @C = ' F=B ?>' F@C@A?' =? ' GACE % 1AC J % E@B @ % AC' F=C= @C ' =D=I @' A1' DCAE ?>' AC' ? @?E@E' A' DCAE @' F@' JDC@ A?' A1'=? ' F' ?A @' AC' I % AC' =? ' D=C ' F@C@A1% AC' =? ' AA % JD @J@? % AC' J = @C = ' @E' AC' @JD A @E' AC' ? @?E@E' A' I@' @E' AC' @JD A @E' ?' AC' =IA ' =? %A1' F@' AD@C=T A? '=1AC@ = E% 4"'6 ''*4"2 #' >"! ' '#4 >& '4"' ! ">& ' 5<6 4 "' 4"' 6 '' &6 <! "' '*"6& ' &4> # ' E 6 ' #! ' 6 ' E6E "' 4"'4 < "' &6 "' 4"' <! 2'> #'4"' &E4' #'4"' ! # #' 4 :'> #'4"' &E4' #'! ' <'*4"2 "''4*'6 '' >"! ' '#4 >& '4" ! ">& '5<6 4 "' F'Z @' J = % 1' F@' F ?<'1 % >C=?' '= G=CC=?' A' @=C F'1AC' F@' =J@';=?E'1' F@' =J@' F= ' I@'1A ?E' DA?' F' @=C F% ' F= ' I@' =G1 ' A' @ K@' =?E' =CC ' F@' =J@' I@1AC@' AJ@'Z @'A1' F@' A ? 'AC'D = @% A' I@' I 'F J 'E DA @E' A1'= ACT E ?>' A' =G';=?E' = ' F' J = @C '=?E' F ?> ' A' @ K@E' = '=1AC@ = E' F= ' I 'ACE@C' A1' F@' A C 'GF@C@'=? ' F' A11@?E@C' F= ' I@' C @E% AC' ?' = @' F@C@' F= ' I@'?A' F' C = ' F@?' I 'ACE@C' A1' AJ@'Z @! A1' F@'D@= @% I@'E@1= @E'=?E'E@ CA @E' AC' A F@CG @' E DA @E' A1' = ' F' A C 'AC'Z @' F= 'E C@ Ḧ N d

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=42' 49/' 1*+<=/' ' 4+* 1='=/' J2*' . "' GM.

K%% 9 =1*+<=/' ='/7' '' ')*+':'?3<4' 3# 49/' HE' !/2' H' 1' YH' =' Y% b' +':' EN !/2'H' 1' YH' ='Y% b' "27/(7+=) J/'' '' (/*+':' 42' =/+(19' &2(' &2()/:' 3 **=' +':' '24/=2&49/' +'0=2& ')*+':'+':' (/*+':' +':' &2(' &(+;/=' ;2<*:=' 1' &2(' ;+0')' =<19 3 **=2(' '24/=' 9 =1*+<=/' ='"+(4*# &(+;/:'2'' 49/=/' /'+14;/'4=' +':' "+(4*# 2'' 49/' = ; *+(' 1*+<=/' '' 49/' 2 '' 14' G **' I' 1' HI' =' .I' 7 49')(/+4+:: 4 2'=

9/(/J/(' '&2'<+4 2'' 2'' 2+49' =';+:/ 3/&2(/' +' 6<=4 1/' 49+4 49/(/' =' (/+=2'' *<=' 1+<=/' 42' 3/* /J/' 49+4 +'# "/(=2'' *<=' 9 =1<=42:#2(' "2==/== 2'' 7 492<4 *+7&<* +<492(4# 2(' /V1<=/' +'# 2& 49/' 49 ')= ;/'4 2'/:' '' 49/' 1*+<=/' 49/' 6<=4 1/' ;+# ==<//'+'=/+(19' 7+((+'4<':/(' 79 19' 4';+# 3/' =/ a/:' +':' =/1<(/:' 42' 3/' <=/:'+=' /J P :/'1/' 2(' 249/(7=/':/+*4' 7 49' +112(:<)' 42' *+7

9/' 1+=/=' /;3(+1/:' 3# 49 =' 1*+<=/' +(/ mQ.' 9/(/' +'# "/(=2'' 9+=' '' 9 = "2==/== 2'' 7 492<4 *+7&<* +<492(4# 2(/V1<=/' +'# '24/' 2(' 3 ** 2& 49/' +'0' 2& ')*+':'2(' (/*+':' 2(2& +'# 249/('3+'0' 9 =' "(2J = 2'' = '4/':/:'42' (/+19' +'# 1+=/' 79/(/' +'# 3 **=2(' '24/=2& +'# 2& 49/=/' 3+'0= ;+# 9+J/' 3//'' <'*+7&<** 4+0/'' +7+# 3/&2(/' 49/# 7/(/' (/)<*+(* ==<1:' 4' =4(</' 49+4' ''=<19' +'1+=/ 49/' 3 **=2(' '24/=' +(/' '24 &2()/:' 3<4 49/#

@ ' : . ' 7 & FA A@B@C F= =1 @C F@ A J J @? @ J @? ' A1 F , ' I @ A?B @E A1 =? ' A11@? @ GF F F= ' F=B@ I @@?' IZ@ @E I '=? ' AC ' A F@ =J @ D= ? ' =?E D@?= @ ' = ' =C@ J DA @E I ' F@ ' D= @E ?' F@ 1 1 F @=C A1 F@ C@ >?' A1 W @@?' K=I @ F ? T @E [?' ' =>= ? ' AC>@C ' A1 = @ #@@E ' =?E & C ?> AC 1AC =? ' A1 FA A11@? @ ' 1 C ' @? J @C= @E ?' F@ = E F= ' I @' > ' A1 1@ A? =?E F= L ?' @ ' A1 F D= ? ' =?E D@?= @ I @ =I @ = ' F@ E C@ A?' A1 F@ A C A' I @' <@D ' ?' D@?= ' @CB E@ 1AC =? ' @C J ' ?A ' @] @@E ?>'' 1A C @@?' @=C@ =?E ?A ' @ 1@=?' FC@@'7 * 3 @=C ` AC A' I @ J DC A?@E 1AC =? ' @C J ' ?A ' @] @@E ?>' GA @=C G F AC G FA ' F=CE =IA C =?E G F AC G 'FA ' A =C ' A?1 ?@T J @? '72(3

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9+J/ 3// '' < '*+7&<**# 4+0/ '' 2<4 2& 49/ 3+ '0 ' + ' :'2<)94 '2442 3/ 1 (1<*+4/ : ' + ' : 49/ 1+=/ =/ +4 */+=4 += =4(2')' += 49+4 2& 12 ' ')'422*= 12 ' J/#/ : 2<4 2& + '# 2& /(+6/=4#& ; '4= 7 492<4 *+7&<* +<492(4# 2(/V1<=/ ' 79 19 ; +# 9/ =/ a/ :' < ' : /(+ =/+(19 7+((+'4 / /' 49/' 2 '' 14' ==' GA' GD' ; J2 ' ' "'' G .-' G.N G' 9/(/ + '# "/(=2 ''9+= ''9 = "2==/=[= 2 '' 7 492<4 *+7&<* +<492(4# 2(/V1<=/ + '# &(+ ; / ' 1 ' &2(; +0 ')' "+"/('' ; 4+4 2 '' 2& + '# 2& 49/' "+"/(<=/ : &24 =<19 '24/= 2(3 **= Q2(+X# =<19 "+"/(2(+ '# "*+4/ ' 722 : ' 1 ' 9+J ')' 49/(/2 '' + '# 72(:=' : /J 1/=' : 1+"+3*/ 2& "(2P :<1 ')' 49/' : "(/== 2 ''2& + '# =<19 '24/2(3 ** Q2(+ '# 422*' 1 ' <=/ :' +32<4 + '# 2& 492=/ 2" /(+4 2 '= H ' U 9/(/ + '# "/(=2 ''9+= ''9 = "2=P =/== 2 ' ' 7 492<4 *+7&<* +<492(4# 2(/VP 1<=/ ' + '# &2()/ :' =/1<(4# ' :21< ; / '4' 2('=4(< ; / ' 79+4=2/J/(' 9 = + ' /7 "(2J = 2 '' + ' :' + J/(# ; "2(4+ '4 + ; / ' :P ; / ' 4 2& 492 *+7' ? &2(4 J ** 4/ ' :' 42 &+1 * 4+4/ "(2=/1<4 2 '= &2(&2 S)/(/# '' ; + '# 1+=/=' 49/(42 4 9+= &(/T</ '4*# 9+" "/ ' / :' 49+4 &2()/(= 9+J/ /=1+"/ :' 7 49 ; "<' 4# &2(7 + ' 4 2& =<19 + "27/(+ = 9/(/ 12 '&/((/ : ' 9 = 1*+<=/ '1*< : /= /J/(# &2()/ :' '=4(< ; / ' 4 79+4=2/J/(' + ' :' 4 +<492(a/= 49/ =/+(19 &2(=<19 + '' '=4(< ; / ' 4 / J/(# 1+=/ + 4 49/ '=4+ '1/ 2& 49/ (27 '' 2(+ "(J+4/ "(2=/1<42(' 4 = 1*/+(49+4 + =/+(19 ; +#3/ ; + : / ' <' : /(4 79/(/J/(49/(/ = (/+=2 '+3*/ 1+<=/ 42 3/* /J/ 49+4 49/ '=4(< ; / ' 4 ' ' 49/ "2==/== 2 '' 2& 49/ &2()/(' &2(9/ 1+ '' 9+J/ '2 ; (/ +<492(4# 2(/V1<=/ &2(4= "2==/== 2 '' 49+ '' 49/ &2()/(' <4 "/(9+"= 4 ; +# 3/ =+ : 49+4 79/ 1 = + '' &2()/ : '=4(< ; / '4 = : /(=<19 1 (P 1< ; =4+ '1/= 49+4 ' & 4 7/(/ +)/ ' < ' / '=4(< ; / '4 ' 9/ 72<*: '9/ "(J */) / : ' &(2 ; "(2 : <1 ') 4 ' 49/ +442(' /# 9+= + *+7&<* +<492(4# 2(/V1<=/ &2(0 / / " ') ' "2==/== 2 '' 2& 4 3<4 49 = 1*/+(& ' = ' 24 =2 ? 49/ ' 72(: = 0 7 492<4 *+7&<* +<492(4# 2(/VP 1<=/$ +(/ '4(2 : <1/ : '' 49 = 1*+<=/ &2(49/ * 0/ "<("2=/ + = '' 49/ 249/(=/14 2 '= 2& 49 = 14 W==' N ' . M ' . . ' . H ' ' . Y ' . D ' . Nb ' + ' : '' 49/ = ; *+(=/14 2 '=2& 49/ 2 '' 14 W==' Y ' D ' Eb ' J a ' 42 "(24/14 "/(=2 '= 792 +(/ *+7&<** '' "2==/== 2 '' 1 ' 2& 49/ 49 ') = "/1 & / : ' + ' : ' 49/ (+) / '4= ' + ' : +(/ '+" "* 1+3*/ 42 64/(=2 '= 792 +(/ < '*+7&<** '' "2==/== 2 '' 2& 49/ 49 ') =X 2(49/ (+) / '4= ' 79/49/ (+442 ; / = 2('24 2 '=/T</ '4*# +** =<19 T</=4 2 '= += +(2=/ '' /V & ; 49 ' 9 * ' J ' . D . ? /) J/(#' E ' ' ANY ? /) ' 2 ' +#7+(: ' G ' ' ' GHI ' ? ' ' += /) ' 2 ' /= ' . ' / ' ' ' . YY ? /) ' & ' L+(*/#' G ' ' ' H . H ? ' / ' ' ' & ' .ND ? + ' : ' /) ' & <&&= ' . ' / ' ' ' E . NX ; +# 3/ +J2 : / : ' '' &<4<(/ 3# =/ a ') 49/ &2()/ : ' '=4(< ; / '4 < ' : /(+ =/+(19 7+((+'4 ==</ : ' '' "<(=<+ '1/ 2& 49 = 1*+<=/ ' 2(= 49/(/ + '# (/+=2 '' 79# 49 = =92<* : ' 24 3/ : 2 ' /? &2(4 = "/(&/14*# 1*/+(49+4 + =42*/ '' : / / : ' 9 ** ' 2('24/ : /* J/(/ : ' 3# + 1* / '4 42 49 = +442('/# ' ; +# 9/ =/ a/ :' < ' : /(+ =/+(19 7+((+'4 ==</ ' : /(=/1' . MH 2& 49/ +(1/ '# 14? =2 49+4 49 = 12 '=4(<14 2 '' "+1/ = 49/ =/+(19 &2(&2()/ :' + ' :' =42*/ '' '=4(< ; / '4 = 2 '' "(/P 1 =/*# 49/ =+ ; / &224 ') +=4*# 79/((/ + '# "/(=2 '' 9+= '' 9 = "2==/== 2 ' ' 7 492<4 *+7&<* +<492(4# 2(/V1<=/ ' + '# ; +19 ' /(# <=/ :' '' 49/ &2()/(# 2& + '# =/1<(4# ' :21< ; / '4 ' 2('=4(< ; / '4 79+4=2/J/(' ' ' !4 W w b ' 24 */= 49+ '' & J/ #/+(= & 49/ 2&& / '1/ 7+= 12 ; ; 44/ :' +&4/(49/ GA49 <*# . EYI ' /' J2*' . ' " ' DH "3 9 = 1*+<=/ = 4+0/ '' &(2 ; 49/ . U ** I ' M ' YY ' =' GH ' + ' : '/V4/ ' : / :' 42 (/*+ ' :' 42 ; //4 + '# 1+=/= ' & ' =<19 49/(/ 3/ ' 42 79 19 4= "(2J = 2 '= ; +# + ""*# H

14' =9+**3/' <+6=* / :' *J4*' "/ ' +# =/ (J P 4<: /' &2(' * &/ ' '

F >% AC' A' EA' AC' = @' A' I @' EAF@' =? ' = % DA?' AC' I ' B C @' A1' =? ' J = @C' G I = A@B@C% <?AG ?>' F' J = @C' A' F=B@' I@@?' 1= @ ' J =E@% 1AC>@E% A ? @C1@ @E% @C= @E% AC' = @C@E% GA E% = ACE ?>' A' F@' DCAB A? ' A? = ?@E' ?' =? ' F' % I@' > ' A1' 1@ A? % =?E' GA E% I@1AC@' F@' D= ?>' A1' F@' ' A1' ' & ' :% ' % F=B@' I@@?' = I @' A' 11@C' E@= F' = ' =' 1@ A?' ! AC' GF@C@' I ' =? ' ' ?AG' ?' 1AC @' =? ' D@C A?' 1= @ ' D@C A?= ?>' =?A F@C% AC' 1= @ ' = <?AG @E> ?>' =? F ?>' ?' F@' ?= J @' A1' =?A F@C% AC' 1= @ ' C@DC@ @? ?>' =? ' A F@C' D@C A?' F=?' F@' C@= ' D=C ' A' I @' F' C@= ' Z =C % AC' G 1 ' J =< ?>' =' 1= @' @? C ' ?' =? ' FAA<% = A ? % AC' EA J @? % AC' ?' =? ' J =??@C' G 1 ' 1= 1 ?>' =? ' D=C ' A1' =? ' I AA<% = A ? % AC' EA J @? % AC' G T 1 ' J =< ?>' =' C=? 1@C' A1' =? ' A <% =?? % AC' 1 ?E' ?' F@' ?= J@' A1' =? ' D@C A?' ? A ' I @ ?>' F@' AG ?@C' F@C@A1% AC' <?AG ?> ' =< ?>' =? ' 1= @' A= F% AC' <?AG ?> ' J =< ?>' =? ' 1= @' =11 E=B ' AC' *6 ' =11 C J =T A?% AC' E@ J =?E ?>' AC' C@ @ B ?>' =? ' J A?@ ' AC' A F@C' F ?>' I ' B C @' A1' =? ' DCA I = @' AC' @ @C ' A1' =E J ? C= A?% <?AG ?>' F@' G ' A?' GF F' F' DCA I = @' F= ' F=B@' I@@?' A I = @E' A' F=B@' I@@?' 1= @' AC' 1AC>@E% AC' <?AG! ?>' F' DCA I = @' AC' @ @C ' A1' =E J ? C= A?' A' F=B@' I@@?' A I = ?@E' I ' J @=? ' A1' =? ' 1= @' A= F' AC' 1= @' =11 C J = A?% GA E% = ACE ?>' A' F@' DCAB A? ' A? = ?@E' ?' =? ' F' % I@' > ' A1' 1@ A? % =?E' GA E' I@1AC@' F@' D= ?>' A1' F@' = E' ' A1' F@' 1 C ' @=C' A1' 6 ?>' & = J ' F@' A C F' F=B@' I@@?' = I @' A' 11@C' E@= F' = ' =' 1@ A?' ; AC' GE @C@' I ' =? ' ' ?AG' ?' 1AC @' =? ' D@C A?' J =< ?>' AC' ?>% AC' <?AG ?> ' F=B ?>' ?' F ' AE ' AC' DA @ A?% =? ' 1C= J @% J A E% AC' ? C J @? ' 1AC' F@' J =< ?>' A1' D=D@C% G F' @ E= ?' GACE ' B I @' ?' F@' I =? @' F@C@A1% AC' =? ' D@C A?' J =< ?>' F' D=D@C% AC' = ?>' @C = ?' GACE ' A' =DD@=C' B I @' ?' F@' I =? @' A1' =? ' D=D@C% GA E% = ACE ?>' A' F@' DCAB A? ' A? = ?@E' ?' =? ' F' % I@' > ' A1' 1@ A? % =?E' GA E' I@1AC@' F@' D= ?>' A1' F@' = E' ' A1' F@' 1 C ! A1' 6 ?>' & = J ' F@' A C F' F=B@' I@@?' = I @' A' 11@C' E@= F' = ' =' 1@ A?' ; F@?% =?E' ?' @= F' A1' F@' @B@C= ' = @ ' =1AC@ = E% 1' =? ' D@C A?' F= ' =1 @C' F@' A J J @? @ J @? ' A1' F ' ' I@' A?B @E' A1' =? ' F' 1@ A? ' = ' ' F@C@ ? I @1AC@' ?' F ' @ A?' J@? A?@E% AC' A1' = E ?>% = I @ ?>% A ? @ ?>% AC' DCA C ?>' F@' AJ J A?' F@C@A1% =?E' F@' = J @' F= ' ?A ' I@' D ? F=I @' ?E@C' =? ' A1' F@' A F@C' DCAB A? ' A1' F ' % @B@C ' F' D@C A?' F= ' I@' = I @% = ' F@' E C@ A?' A1' F@' A C % A' I@' <@D ' ?' D@?= ' @CB E@' 1AC' 1@' AC' 1AC =? ' @C J ' ?A ' @ ' F=?' FC@@' 1B3' @=C % ` AC' A' I@' J DC A?@E' 1AC =? ' @C J ' ?A ' @] @@E ?>' GA' @=C % G F' AC' G FA ' F= !E' =IA C% =?E' G F' AC' G FA ' A =C ' A?1 ?@ J @? ' 1!3

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0 ' : % GF F' C@ = @ ' A' F@' D ? F J @? ' A1' DC ? D= ' ?' F@' Y @ A?E' E@>C@@' =?E' = @ AC @ % G ' I@' 1A ?E' A ' % D ' 98

@ ' ' GF F' C@ = @ ' A' ?E =I @' A11@? @ ' J @? A?@E' ?' F ' ' GF F' F= ' I@' A J J @E' G F ?' F@' Z C E A?' A1' F@' E J T C= ' A1' ?> =?E' AC' C@ =?E% G ' I@' 1A ?E' BA ' % D ' :

@ ' 8 % GF F' = @ ' GF@?' =?' A11@?E@C' J = ' I@' 1 ?@E' AC' C@T b C@E' A' 1 ?E' C@ @ ' 1AC' <@@D ?>' F@' D@= @% G ' I@' 1A ?E' BA ' % D ' 9

@ ' 8-% = ' A' @? @? ?>' =?' A11@?E@C' A' I =C11' = I A C% G ' I@' 1A ?E' BA ' % D% 9

" B 24' */==' 49+ ' ' & J/' #/+(=' &' 49/' **' I ' 1 ' YY' =' . ' + ' :' /V4/ ' : / :' 42' (/P 2** /<1/' J+=' 12 ; ; 44/ :' +&4/ (' 49/' GA49' <*#' *+ ' : ' 42' ; / /1' + ' # 1+=/ ' &' =<19' 49/ (/' 9/ ' .EY I ' /' J2 ' . ' " ' DE 42' 7 9 19' 4=' " (2J = 2 ' =' ; +# +" "*# R B 9 =' 1*+<=/' =' 4+O / ' ' &(2 ; ' 49/' .

@ 8 GF F = @ GF@? A =C A?1 ?@J@? J = I@ =G=CE@E 2* 4+(# 12'P
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@ 8: T F@ AJE; I@1AC@!GF F =? ? ?E =I @ J E@J@=?AC 9/ 12=4= 2&
=>= ? F F= I@ DCA @ @E AC C @E J = = AG F@ A 49/ "(2=/1<P
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@B@C ACE@C' 1AC' F@' D= J@? A1' F A F= I@' J =E@' A =?E' :/ ; /+ '2(+
F@' J A1' JA?@ ' ?@? A?@E' F@C@ ?' D= E' =?E' C@D= E DA?' F@' +)+ '=4 49 =
=J@' @CJ '=?E' ?' F@' =J@' J =??@C' ?' = ' C@ D@ ' = ' ?' = @ A1' 14 ; +# 32
1@ A? HNZd +**27/:

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G F' F@' @=' A1' F@'C@ ACE'A11 @=?E'I ' @ ' F' AD@ ' =C@'
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= F@? ' AD ' A1' =' C@ ACE' ?' F@' AE ' A1' F@' *= @C' A1' F@'
(A %' <?AG ?>' F@' =J@' A' I@' 1= @' ?' =? ' J=@C =' D=C %' =?E'
@B@C 'D@C A?'GFA' F= ' A ? @C1@ ' F@' >?= C@' A1' =?' = =?'
C@ ACE' <@@D@C'1AC' F@' D CDA @'A1' A ? @C1@ ?>' Q @C 1@E' AD 'A1'
=' C@ ACE%' AC' F= '1AC>@'AC' A ? @C1@ ' F@' @=' A1' F@' D I ' C@ ACE'
A11 @%' F= ' I@' > !A1' 1@ A? %' =?E' I@ ?>' E ' A?B @E' F@C@A1'
F= ' I@' =I @%' = ' F@' E C@ A?'A1' F@' A C %' A%'I@' C=? DAC @E' 1 3'
I@ A?E' F@' @=' 1AC' 1@%' AC' 1AC'=? ' @CJ'?A ' @ ' F=?' @B@?' ' 6" '
AC' A' I@' JDC A?@E'1AC'=? ' @CJ'?A '@] @@E ?>'1A C' @=C H

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@ '- ' 7 F@' GACE' [C@ ACE n' J@=? ' = 'CA %' C@ ACE%' GC %'
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EA J@? 'GF= A@B@C' A1' =' D I ' ?= C@' I@ A?> ?>' A' @C' * =T
Z@ %' AC' ?AG' E@DA @E' ?' =? ' A1' F@' A11 @ ' AC' D = @ 'A1' AE '
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=J@' A' I@' 1AC>@E'AC'1C= E @? '= @C@E%'=? 'C@ ACE%'GC %'C@ C?%'
D=?@ %' DCA @ %' C @%' ACE@C%'G=CC=? %' ? @CCA>= AC %' E@DA A?%'=11 T
E=B %' =11 CJ= A?%'C@ A>? K=? @%' A>?AB ' = A?@J%' AC' G=CC=?' A1'
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=? ' A C' A1' (@ ACE%' AC' =? ' I %'!D@ A?%' DCA @ V%' ?A @%' C @%'
=? G@C%' D @=E ?>%' ? @CCA>= AC %' E@DA A?%' =11 E=B %' =11 CJ= A?%%'
C@DAC %' ACE@C%' AC' E@ C@@%' AC' =? 'AC > ?= 'EA J@?'GF= A@B@C' A1'
AC' I@ A?> ?>' A' =? ' A C' A1' b 'AC' A C' A1' EJ C= ' ?'
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=? 'EA J@?'AC'GC ?>%' @E' AC' ? @?E@E' A' I@' @E' =' @B E@? @'
?' =? ' A C' ?' F ' @ A?' J@? A?@E%' F= F' I@' > 'A1' 1@ A? %'
=FE' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @%' = ' F@' E C@ A?'A1' F@'
A C %' A' I@' <@D ' ?' D@?= ' @CB E@' 1AC' =? ' @CJ'?A '@] @@E ?>'
@B@?' @=C '=?E'?A ' @ ' F=?' FC@@'NJ d' @=C :% ` AC' A'F@' JDC A?@E'
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RCB 9/' 14' 12'4+ '=' '2' "(2J=2'' +='
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2&&/'1/' 7+=' 12 ; ; 44/:' +&4/('49/' GA' <*#'
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7 C‘
7 ‘ F@C@I ‘> B@‘ A ‘?A @‘ F= ‘ ? @ ‘ F@‘ =JA ?‘A1‘ A C‘
= A ?‘S ‘ ‘H# ‘5<! <‘! ‘E @‘ A4‘J @‘ ‘ D= E7A?‘ AC‘ I@1AC@‘ <‘
“#‘! 6 ‘ 4‘& ‘ E‘ < ‘ >6“”‘ ‘ DCA @@E ?> ‘G ‘ I@‘ =<@?‘ A‘
AI = ?‘ F@‘ =J@‘ ?‘D C =? @‘G F‘ F@‘ DCAB A? ‘A1‘ F@‘ = @‘
F‘ ,‘ F‘A1‘ ,! 4“!6 ‘ =D‘ -8 F‘ A1‘ F@‘ ?@G‘ A ? ‘ A C‘ ‘
1AC‘ F@‘ JAC@‘ @= ‘C@ AB@C ‘A1‘ J= ‘E@I ‘ ,
4)A C‘ , ‘
7W“ # “! ‘ >2 ! 4 ‘J “ ‘ 4‘J4>“ ‘
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F@‘GFA @‘@] @D ‘ F@‘D=C ‘ ?‘ = ‘G= ‘ ?‘DC ? ‘ 1@C‘ F@‘ @ @C‘
F=E‘ I@@?‘ C@ @ B@E‘ F@‘G 1@‘A1‘ (AI@C ‘G@?‘ A‘ F@‘DC A?@C‘=?E‘
= <@E‘ 1‘F@‘F=E‘ @?‘ F@‘ @ @C‘ F@‘C@D @E‘ F= ‘F@‘F=E‘ACE@C@E‘ F@‘
A C‘ A‘ @?E‘ ‘ =?E‘A?‘I@ ?>‘ A‘ ?1ACJ @E‘ F@‘D= E‘ F@‘DC A?@C‘ F@‘
@?‘ F ?> ‘E@J =?E@E‘ ?‘ F@‘ @ @C‘ & F ‘ F@‘JA?@ ‘G= ‘ ?>‘
A?‘ F@‘ =I @‘ F@‘ DC A?@C‘ = <@E‘ F@C‘ 1AC‘ 1 1 @@?‘ D@? @‘1AC‘ A ? ‘
A C‘@]D@? @ ‘= ‘ F@‘G=? @E‘ A‘D ‘ F@‘1 ‘ =JA ?‘ ?‘ F@‘C@T
@D ‘GF F‘ F@‘ G= ‘ F@?‘ GC ?> ‘ F@‘ = E‘ F@‘ F=E‘ ?A‘ JAC@‘
JA?@ ‘ @‘ = E‘F@‘GA E‘ =<@‘]D@? @‘=?E‘ F= ‘F@4F=E‘EA?@‘ F@‘
=J@‘ B F‘ * C‘ B=? ‘GFA‘ F=E‘ D= E‘ F J‘1 1 @@?D@? @‘1AC‘ A ? ‘
A C‘@]D@? @ ‘ F@‘ = E‘ F@‘ F=E‘ ?A‘ =? ‘JAC@‘ JA?@ ‘=?E‘ ?A‘
JA?@ ‘G= ‘ D= E‘1AC‘ A ‘=?E‘=‘C@ @ D‘1AC‘ @?H F ?> ‘= A?@‘G=‘
> B@?‘ ?E‘ A?‘ =‘ = @‘ C@ @CB@E‘ ‘ G= ‘F@ E‘ F= ‘ F@‘ = @‘1@‘
G F D‘ F@‘GACE ‘ @B@C ‘D@C A?‘ ?GFA‘ F= ‘ = ‘AC‘ DCA1@ ‘ A‘ = ‘
?E@C‘ =? ‘ 1= @‘ A A C‘ AC‘ DC@ @? @‘ A1‘ F@‘ DCA @ ‘ A1‘ F@‘ =E‘
A C H F ‘IC=? F‘A1‘ F@‘ = @‘=DD @E‘ A‘ =‘ D@C A?‘ DC@ @?E ?>‘
A‘= ‘ ?E@C‘DCA @ ‘A1‘ F@‘ A C‘GF@?‘ F@C@‘ ‘ ?‘ 1= ‘ ?A‘ DCA @ ‘
=?E‘ F@C@1AC@‘ =DD @E‘ A‘ F@‘ DC@ @? ‘ = @‘ F@‘ J@C@‘ @?E ?>‘A‘
F@‘ @ @C‘I ‘ F@‘ DC A?@C‘ GA E‘ ?A ‘ = A?@‘ F=B@‘ I@@?‘ 1 @?‘;‘
I ‘F@‘=1 @CG=CE ‘ DC@ @?E@E‘ F= ‘1 1 @@?D@? @‘G= ‘E @‘1AC‘ A ? ‘
A C‘@]D@? @ ‘; =?E‘ F@C@‘ A E‘ I@‘ ?A‘ EA I ‘ ? @?E@E‘ F@‘
GAJ=?‘ A‘ I@ @B@‘ F= ‘ F@‘ F=E‘ DCA @ ‘GF F‘ @? @E‘ F J‘ A‘
C@ @ B@‘ F= ‘ J ‘; =?E‘ F= ‘ F@‘ F=E‘ ? CC@E‘ A ‘ ?‘ C@ D@ ‘ A‘
DCA @@E ?> ‘ ?‘ F@‘ A ? ‘ A C‘ NCd

/‘:‘)‘&2()/:‘ ?E‘GF@C@‘A?‘=‘ J =C‘ ?E J@?‘A?‘ F@‘ =J@‘ = @‘ ‘=D‘
‘=4(<14 2‘=42‘ D@= H@E‘ F= ‘ F@‘DC A?@C‘F=E‘AI = ?@E‘ I =?<‘1ACJ ‘1AC‘ F@‘D = ? 11H‘
==</‘+‘ 2<‘4# ? C A? ‘ A‘ @‘ =‘ A ? ‘ A C‘ J JA? ‘A?@‘ A1‘GF F‘ F@‘
2<(4 =<‘ [1 @E‘ D‘ =?E‘G FA ‘ =? ‘ = FAC ‘ >?@E‘ ‘ 7 & =J‘ @ ‘
;2‘=‘ 7 49 +‘ (@> C=C‘A1‘ F@‘ = ? A?‘ A C ‘H=?E‘ GCA @‘A?‘ F@‘ I= <‘ 7 ?@ ‘
‘24 1/‘49+4‘ F@‘GFA @‘=JA ? ‘ = J@E‘I ‘ ‘(FJA?E‘!‘EC=D@C‘ A1‘ = ?A?‘
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K7+“+ :‘ /V/

W(‘ /)‘ J+‘=‘ ‘ ‘ ‘GHY‘ GY 3/‘ :/* J/(/:‘ 42‘ +‘#‘ “/(=2‘‘ +‘#‘ “+“/(
‘ ‘ ‘ NG‘ 9/‘ 72(:‘ 2‘ 49/‘N‘ “<(“2(4 ‘)‘42‘9/‘+‘12“# 2‘+‘#=<; ;2‘=
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792‘=9+*‘ &2()/‘49/‘=/+*‘ 2‘+‘#“(21/=‘ 2‘ 792‘=9+*‘+14‘2(“(2P
49/‘12<(4‘+‘:‘792‘=9+*‘=/(J/‘2(‘/‘&2(1/‘ &/=‘ 42‘ +14‘<‘:/(‘+‘#&+*=/‘12*2<(‘2(“(/P
+‘#=<19‘&2()/:‘“(21/=‘0‘27 ‘)‘49/‘ 4/‘1/‘2‘49/‘“(21/=‘2‘49/‘=+ :‘12<(4 S
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' D= E ' A ? = CE= ' =? ' @] @ A ? ' G=CC=? ' G ' I @ ' J J @E = @ ' % " % '
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G= ' F @ ' C@> C=C ' I ' F @ ' >?= C@ ' A ? ' F @ ' 1= @ ' =?E ' I = < ' G@C@ ' = P B '
1AC>@C @ ' F @ ' DC A?@C ' @ ? ' F ' EA J @ ? ' A ' ' ?AA< ' F @ ' ' # ' % '
D@C A ? ' ?= J @E ' ?' ' = ' E@1@?E=? ' GFA ' AG@E ' F@ ! DC A?@C ' F@ '
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@b @? @ ' A1 ' F@ ' A I @CB= A ?' ?' F@ ' DC@ @E ?>' = @ ' F= ' F@ ' J @C@ '
@?E ?>' F@ ' @ @C ' GA E ' ?A ' F=B@ ' I @@?' = ?>' ?E@C ' A A C ' A1 '
DCA @ ' G= ' F@ E ' F= ' F ' ' A11@? @ ' DCAB@E ' G= ' @C = ? ' =' DCAT
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' GF@C@ ' A?' =' J =C ' ?E J @? ' ' =DD@=C@E ' F= ' 6 ?> A?@ ' &# ' : ' '
F=E ' ICA >F ' =?' = A?' =>= ? ' & = ?GC >F ' ?' =' A ? ' A C ' A ' R55I '
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A ' C@ @ B@ ' F@ ' E@ I ' =?E ' A ' ' =?E ' 1 ' F@ ' = J A ? ' G= ' ?A ' D= E ' A?'
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1AC ' F@ ' E@ I ' ; F@ ' E@1@?E=? ' F@G@E ' F J ' F@ ' J J A? ' = J @E '
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1@?E=? ' D= E ' F J ' ' 9 ' # ' ' GA E ' AB@C ' = ' @] D@? @ ' ; =?E ' F@ '
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F= ' F@ ' F=C>@ ' G= ' LA ' J =E@ ' A ' = ' F@ ' FA >F ' F@ ' =DD @E '
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A C ' N d

& @ ' F=B@ ' @@?' F= ' GF@C@ ' =?' ?E J @? ' = @>@E ' F= ' F@ ' DC A?@C ' $ '
E@ B@C@E ' =' @C = ?' D=D@C ' 1= @ ' D CDAC ?>' A ' I @ ' =' @C = ?' DCA @ '
A1 ' =' A ? ' A C ' =?E ' F@ ' EA J @? ' ?' b @ A?' G= ' =' J @C@ '
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I @@?' A?B @E ' 7>3

' F@ ' - : ' , ' -8 ' 3 @ ' ' 9 ' - ' 7GFA A@B@C ' F= ' 1AC>@ ' AC ' ?'
1C= E @? ' = @C ' AC ' F= ' A11@C ' @C ' E DA @ ' A '' AC ' D ' A '' $ P2 '
<?AG ?>' F@ ' =J @ ' A ' I @ ' 1AC>@E ' AC ' 1C= E @? ' = @C@E ' =? ' !6 '
C J @? a ' GF@ F@C ' GC @?' AC ' DC ? @E ' AC ' D=C ' GC @?' =?E ' D=C ' S $ '
DC ? @E ' GF F ' ' AC ' F= ' I @ ' J =E@ ' @B E@? @ ' I ' =? ' ' D= @E ' AC '
A ' I @ ' D= @E ' =?E ' 1AC ' GF F ' A11@? @ ' ?A ' D ? F J @? ' ' F@C@ ?' DCAT
B E@E ' F= ' I @ ' > ' A1 ' 1@ A? ' =?E ' I @ ?>' A?B @E ' F@C@A1 ' F= '
I @ ! =I @ ' = ' F@ ' E C@ A?' A1 ' F@ ' A C ' A ' I @ ' <@D ' ?' D@?= '
@CB E@ ' 1AC ' =? ' @C J ' ?A ' @] @@E ?>' @B@?' @=C ' =?E ' ?A ' @ ' F=?'
FC@@ ' 1 3 ' @=C ' ` AC ' A ' I @ ' J DC A?@E ' 1AC ' =? ' @C J ' ?A ' @] @@E ?>'
GA ' @=C ' G F ' AC ' G FA ' F=CE ' =IA C ' =?E ' G F ' AC ' G FA '
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8 ^ 3 3 6 # . $% &(<

@C ?>= FR . , 9 @A : -9 =1 @C C@ ?> F@ @]D@E @? A1 DCAB E ?> 1AC F@ JAC@ @]@JD =C D ? FJ@? A1 A11@?E@C GFA AJJ 1@ A? =1 @C = DC@B A A?B A?1AC 1@ A? =?E @?= ?> 4 F D ? FJ@? C@> = @ F@ 1ACJ A1 ?E J@? 1AC F@ I @T b @? 1@ A? =?E F@?@?= F= 7= @C 1 = @ A? = ? ?> F@ IT =? @ =?E @11@ A? NAJ ?> F@ 1AC?== D=C d A1 F@ ?E J@? =?E A?B A?1AC F@ DC@B A 1@ A? D CDAC ?> A I@ >?@E I F@ @C<A1 F@ A C AC A F@C A11 @C F=B ?> F@ AE A1 F@ C@ ACE A1 F@ A C GF@C@ F@ A11@?E@C G= 1 C A?B @E AC F F@ E@D A1 F @C<AC A11 @C N1AC GF F @C 1 = @ =1@@ A1]F ?> =?E @ > D@? @ =?E ?A JAC@ F= I@ E@J=?E@E AC =<@?d F= DA?1 DCAA1 A1 F@ E@? A1 F@ 1C A?B A? G FA DCAA1 A1 F@ >?@E F@ =J@ ; =?E 1 =? F @C<A11 @C AC E@D A F=B@ >?@E F@ =J@ ; =?E 1 =? F @C<A11 @C AC E@D F= FC =1= @ @C 1 = @ A1 =? D@C A? A F@C F=?= F @C<A11 @C AC E@D F= >?= @C =? F @C 1 = @ = F @C 1 = @ G F =1= @ AC A ? @C1@ >?= C@ F@C@ A @B@C F A11@?E@C F= I@ > A1 1@ A? =?E I@ ?> =G1 A?B @E F@C@A1 F= I@ = F@ E T C@ A? A1 F@ A C A I@ C=? DAC @E I@ A?E F@ @= 1AC F@ @CJ A1 @B@? @=C Nh?d AC A I@ JDC A?@E 1AC =? @CJ ?A @] @@E ?> GA @=C ; =?E 1 = J= @ A I@ A? @ G @ AC FC @ D I AC DC B= @ GF DD@E N 1 F@ A C F= A F ?<1 d ?=EE A? A F JDC A?J@? HN d - : , -8 3 @ 9 -7&FA A@B@C G F ? @? A E@1C= E F= 1AC>@ AC = @C AC F= A11@C @C E DA @ A1 AC D A11 <?AG ?> F@ =J@ A I@ 1AC>@E AC = @C@E =? J JA? A?B A? ACE@C AC G=CC=? A1 =? Z @ A1 F@ D@= @ AC =? C@ A>? K=? @ D CDAC ?> A F=B@ I@@?@? @C@E ? A I@1AC@ =? Z @ A1 F@ D@= @ AC A F@C A11 @C = FAC K@E A =<@H F@ =J@; AC =?]=J ?= A? E@DA A? =11 E=B =11 CJ= A? AC A @J?@ E@ =C= A? =<@?AC J=E@ I@1AC@ =? Z @ A1 F@ D@= @ F= I@ > A1 1@ A? =?E I@ ?> A?B @E F@C@A1 F= I@ =I @ = F@ E C@ A? A1 F@ A C A I@ <@D ?D@?= @CB E@ 1AC F@ @CJ A1 F ?@ 1 3 @=C AC A I@ JDC A?@E 1AC =? @CJ ?A @] @@E ?> GA @=C G F AC G FA F=CE =IA C =?E G F AC G FA A =C A?1 ?@T J@? HN=d F@ , -3 @ 9. N F@ #A J@? C B E@? @ 9 9d :1 =? D@C A? AJJ =? A1 F@ A11@? @ 1A AG ?> F= A = ` N d 5C ? =? AD A1 =? DCA =J= A? ACE@C AC C@> = A? GF F 1= @ D CDAC A F=B@ I@@? DC ? @E I F@ >AB@C? J@? DC ? @C AC A I@ DC ? @E ?E@C F@ =b FA ; 7 $ # : : # 1?3 c45 7 % 4 $ 8 7 # 7 4 7 5 041 : # ; % 4 $ # 5 9 ! - 7 &# 5 , 9 E 7 # % #$ 163 &# % : # ; % , 6 5 @7 -

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C ' A1 ' F@ ' @> = C@ ' A1 ' =? ' C F ' A A? ' AC ' DA @ T
A?% AC ' @?E@C ' ?' @B E@? @ ' =? ' AD ' A1 ' =? ' DCA = J =T
A?% ACE@C ' AC ' C@> = A?% GF F ' 1= @ ' D CDAC ' A '
F=B@ ' I@@?' DC ? @E ' = ' =1AC@ = E% <?AG ?>' F= ' F@ ' =J@ '
G= ' ?A ' A ' DC ? @E ' ; AC%

N- d AC>@ ' AC ' @?E@C ' ?' @B E@? @% <?AG ?>' F@ ' = J @ ' A ' F=B@ '
I@@?' 1AC>@E% =? ' @C 1 = @ ' I ' F ' '= FAC K@E ' A ' I@ '
=??@]@E ' A ' =' AD ' A1 ' AC ' @] C= ' 1CA J ' =? ' DCA = J = A?% '
ACE@Z% AC ' C@> = A?% %

F@ ' F= ' I@ ' > ' A1 ' 1@ A? % =?E ' F= ' A?' A?B A?' I@ ' =I @ ' A ' I@ '
@? @? @E ' A ' D@?= ' @CB E@ ' 1AC ' F ' @C J ' i^ ' ' DC@ C I@E ' I ' F@ '
5@?= ' @CB E@ ' % 9 : % F@ ' @= ' @C J ' A ' GF F ' =?' A11@?E@C '
=?' I@ ' @? @? @E ' A ' D@?= ' @CB E@% N d AC ' A ' I@ ' J DC A?@E ' 1AC '
=? ' @C J ' ?A ' @] @@E ?>' GA ' @=C % G F ' AC ' G FA ' F=CE '
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F@C@ ' =C@ ' J =? ' = ' GF F ' A? = ?' @?= J @? ' C@ = ?>' A ' F@ ' AC>@C ' A1 '
1AC>@C ' A1 ' @= ' =?E ' DCA @ ' A1 ' A C ' =?E ' ? C J @? ' UA1 ' @B E@? @% @= % DCA @ '
A J @ ' A1 ' F@ @ ' G ' I@ ' 1A ?E!' ?' BA ' % B E@? @

F@ ' 9 ' , ' ' 3 @ ' ' % ' :% 7 ?' ' A ' 1= = @ ' F@ ' =E J A?'
?' @B E@? @ ' A1 ' @C = ?' A11 =' =?E ' A F@C ' EA J @? %H J =<@ ' ' ='
1@ A? ' A ' 1AC>@ ' F@ ' @= % = J D% AC ' >?= C@ ' A ' F@ ' EA J @? '
F@C@ ?' J @? A?@E% AC ' A ' @C ' F ' 1AC>@E ' EA J @? % ,

F@ ' A ? ' A C ' % ' , ' 3 @ ' ' 8% ' 8 .% A? = ? ' ='
J =C ' = @ ' = ' A ' F@ ' @= ' =?E ' DCA @ ' A1 ' A ? ' A C

F@ ' , ' -' 3 @ V ' .9% GF F ' C@= @ ' F@ ' A C ' 1AC ' CAG?'
= @ ' C@ @CB@%E% I ' @ ' % J =<@ ' ' =' 1@ A? ' A ' 1AC>@ ' AC ' @C ' F@ '
EA J @? ' F@C@ ?' J @? A?@E

F@ ' :' , ' 8 ' 3 @ ' ' ' N=?' ' A ' = J @?E ' F@ ' =G ' A1 ' B E@? @d% '
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J @? A?@E% AC ' A ' @?E@C ' ?' @B E@? @ ' =? ' F ' EA J @? ' G F ' ='
1AC>@E ' @= ' F@C@ A

F@ ' .' , ' 9 ' 3 @ ' ' .9 ' N E J C= ' A C ' % 98 : d% % J =<@ '
' =' 1@ A? ' A ' 1AC>@ ' F@ ' >?= C@ ' AC ' @= ' A1 ' =? ' A J J A?@C%
Z E>@% , % AC ' A ' @?E@ ?' @B E@? @ ' EA J @? ' G F ' F ' 1AC>@E '
>?= C@ ' AC ' @= ' 4

F@ ' >@?@C= ' DCAB A? ' A1 ' F@ ' - :' , ' -8 ' 3 % ' 9% ? E@ ' F@ '
>C@= @C ' D=C ' = ' @= ' A1 ' F@ ' A11@? @ ' ?' F@ @' = @ % =?E ' A ' F=B@ '
? @C @E ' F@ C ' D@?= ' DCAB A? ' = ' @?> F ' GA E ' F=B@ ' I@@?' = @?E@E '
G F ' ?A ' A J J @? C= @ ' =EB=? =>@ ' ; 1AC% GF@C@B@C ' =' DCA @ A?'
=<@ ' D = @ ' ?E@C ' =? ' A1 ' F@ @' % ' G ' I@ ' ?@ @ =C ' A ' C@1@C ' A '
J =? ' A F@C ' DCAB A? ' ?' F@ ' % ?' ACE@C ' A ' = @C = ?' GF= ' F@ '
A11@? @ ' C@= @E ' I ' F@ ' D@?= ' = @ ' C@= ' =C@

DA?' F@ ' C = ' A1 ' =? ' ?E J @? ' 1AC ' =? ' A11@? @ ' ?' F ' F=D @C ' 7 ' '
F@ ' Z C ' J = % ?E@C ' F@ ' :' , ' 8 ' 3 @ ' ' % ' % 7#3 A?B ' F@ ' = @JD %
DC A?@C ' A1 ' =?' = @ J D ' A ' A J J ' F@ ' =J @% =?E ' F@C@ DA?' F@ ' J = '
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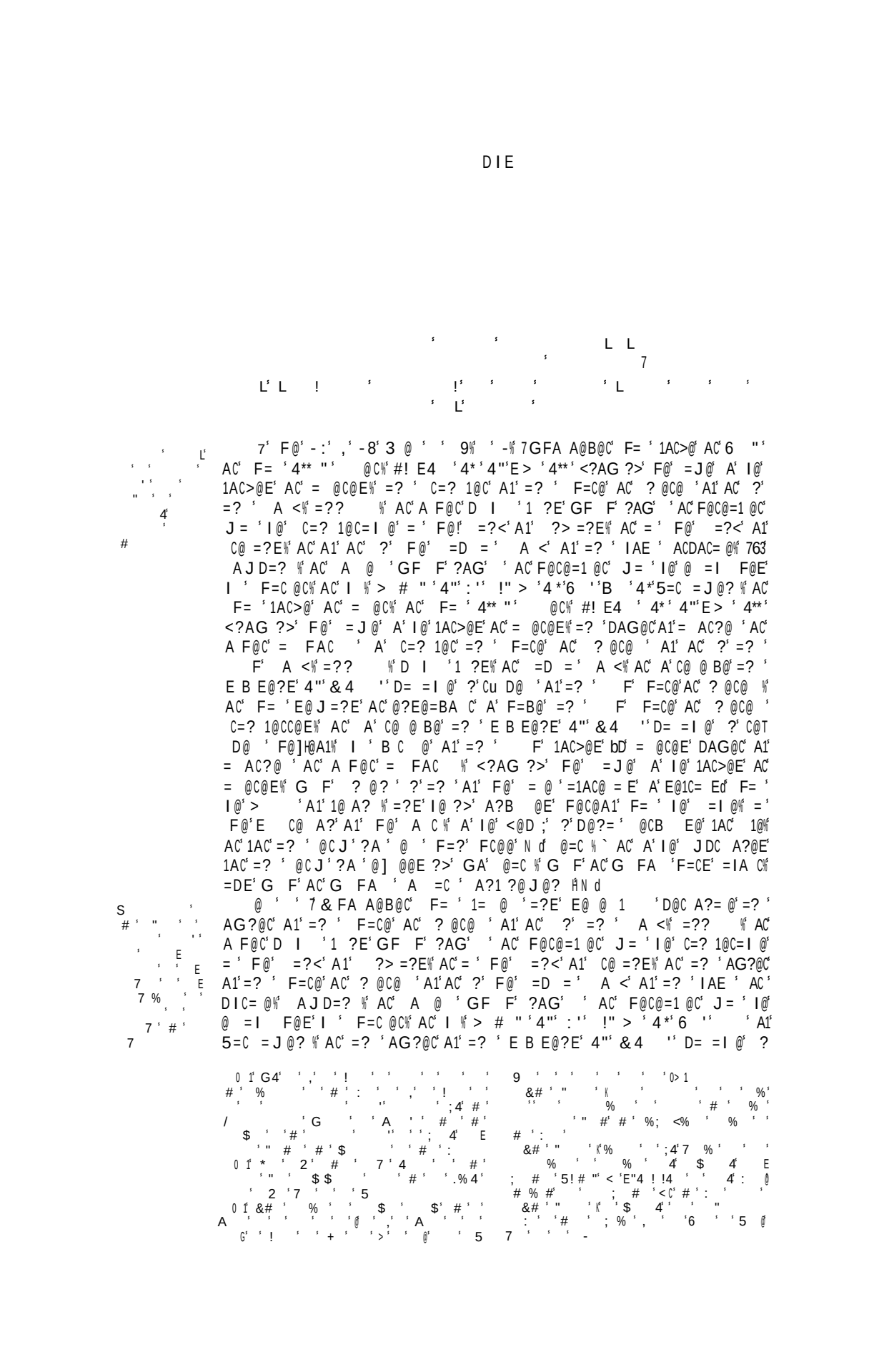
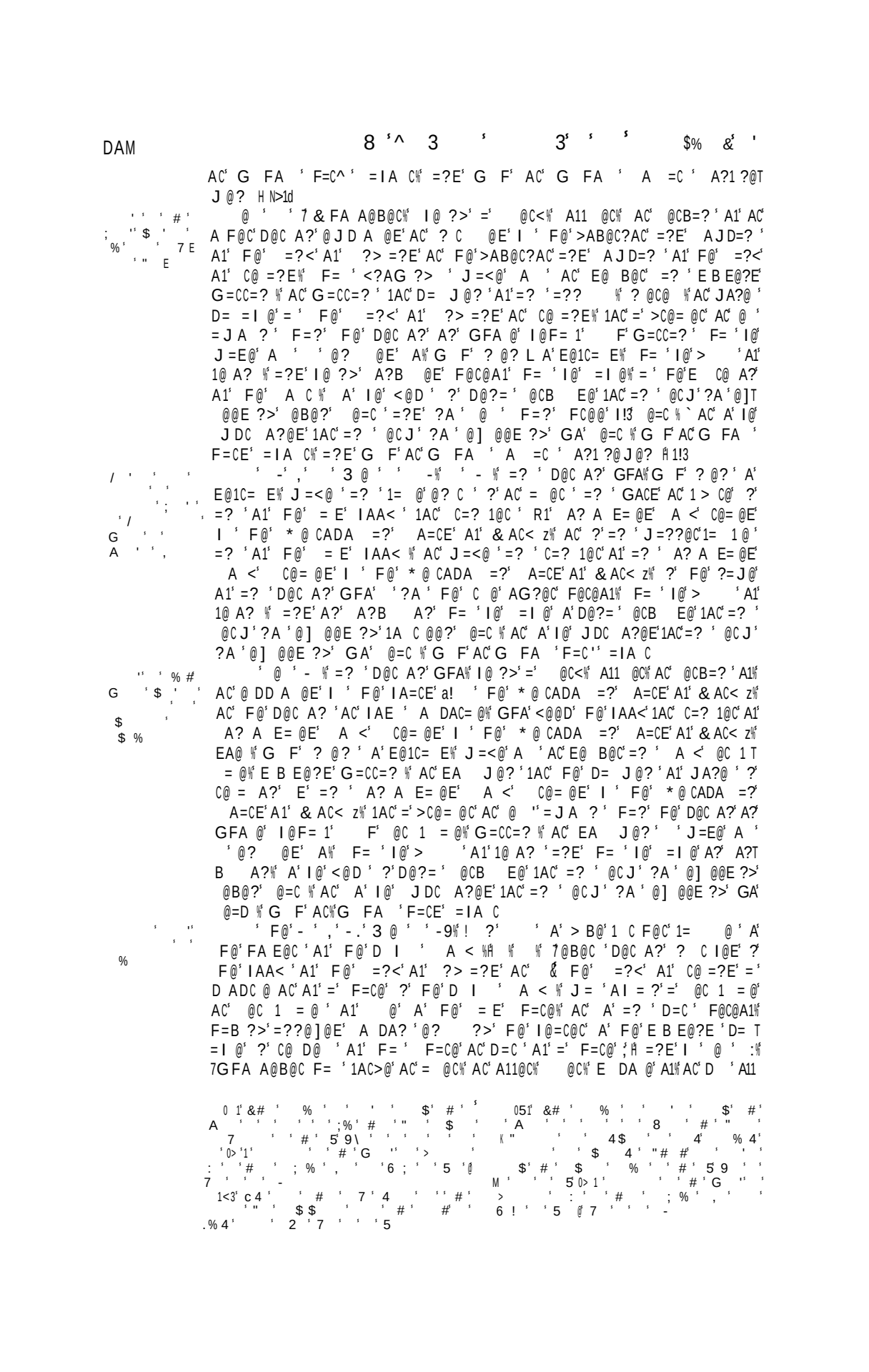
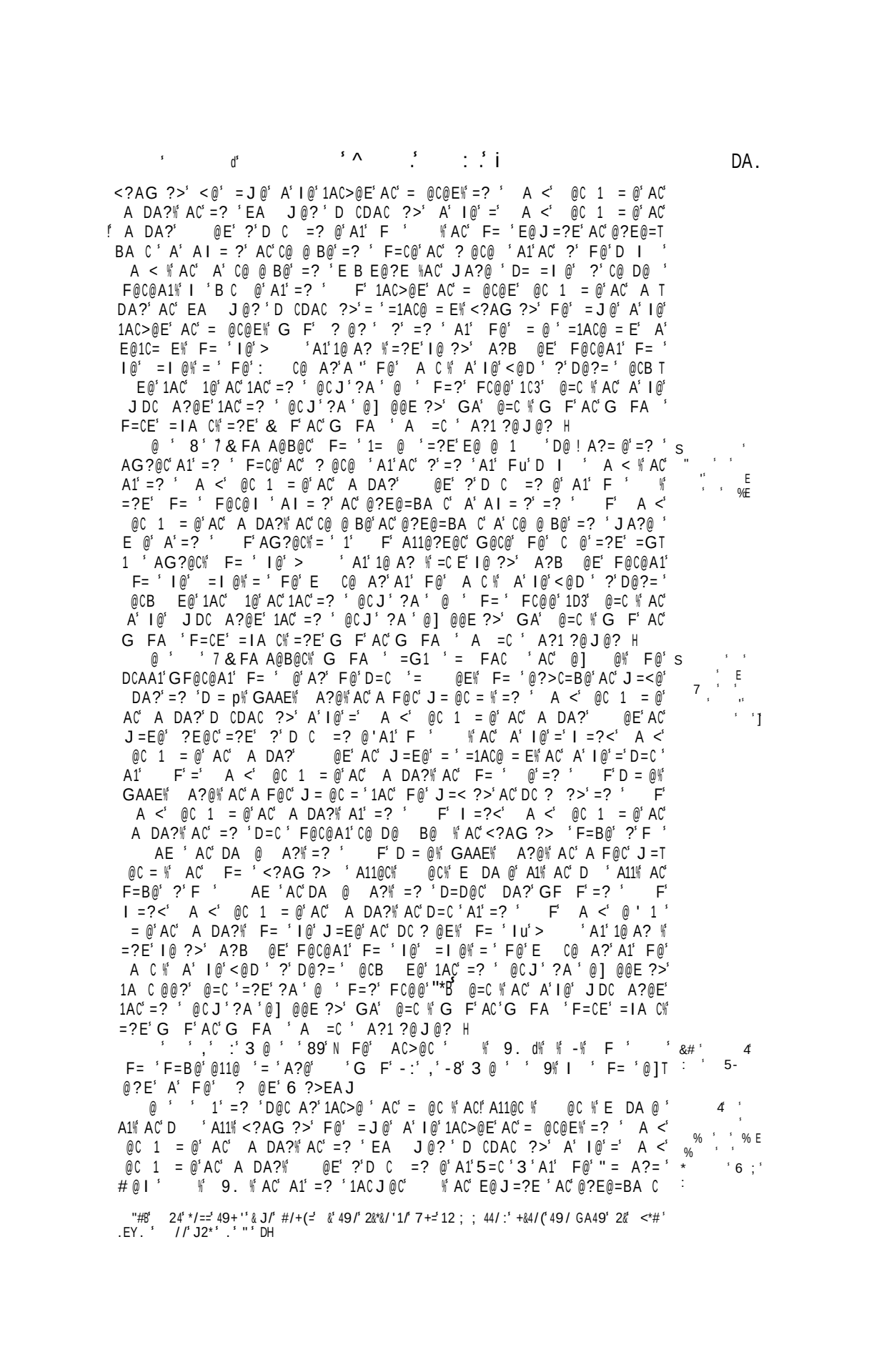
DIE







A‘ A I = ?‘ AC‘ C@ @ B@‘ =? ‘ F=C@‘ AC‘ ? @C@ ‘ A1‘ AC‘ ?‘ =? ‘ A <‘ = ‘ E@1 ?@E‘ ?‘ F@‘ " = A?= ‘ # @ I ‘ %‘ 9. %‘AC‘ A‘C@ @ B@‘ =? ‘E B E@?E‘ AC‘ J A?@ ‘ D= =I @‘ ?‘C@ D@ ‘ F@C@A1%‘ I ‘B C @‘A1‘=? ‘ F‘ 1AC>@E‘ AC‘ = @C@E‘ @C 1 = @‘ AC‘ A DA?%‘AC‘EA J @? ‘D CDAC ?>‘ = ‘ =1AC@T = E%‘ <?AG ?>‘ F@‘ =J @‘ A‘ I @‘1AC>@E‘AC‘ = @C@E%‘G F‘ ? @? ‘ ?‘ =? ‘ A1‘ F@‘ = @ ‘=1AC@ = E‘ A‘E@1C= E%L‘F@‘ F= ‘ I@‘ > ‘A1‘1@ A? %‘=?E‘ I@ ?>‘ A?B @E‘ F@C@A1‘ F= ‘ I@‘ =I @%‘ = ‘ F@‘E C@ A?‘ A1‘ F@‘ A C %‘ A‘ I@‘ <@D ‘ ?‘ D@?= ‘ @CB E@‘1AC‘ 1@‘ AC‘1AC‘ =? ‘ @CJ‘?A‘ @ ‘ F=?‘1 B@‘ @=C %‘AC‘ A‘I@‘ JDC A?@E‘1AC‘=? ‘ @CJ‘?A‘@] @@E ?>‘ GA‘ @=C %‘ G F‘ AC‘ G FA ‘ F=CE‘ E=IA C%‘ =?E7G F‘ AC‘ G FA ‘ A =C ‘ A?1 ?@J@? R

@ ‘ : ‘ 1‘ =? ‘ D@C A?‘ 1= @ ‘ =?E‘ E@ @ 1 ‘ D@C A?= @ ‘ =? ‘ AG?@C‘A1‘=? ‘ F=C@‘AC‘ ? @C@ ‘A1‘AC‘ ?‘=? ‘ F! A <‘ = ‘ =1AC@ = E%‘ AC‘A1‘=? ‘ F‘ A <‘ @C 1 = @‘AC‘ A DA?‘ = ‘ =1AC@ = E%‘=?E‘ F@C@I ‘ A I = ? ‘ AC‘ @?E@=BA C ‘ A‘ A I = ?‘ =? ‘ F‘ A <‘ @C 1 = @‘ AC‘ A DA?% ` AC‘ C@ @ B@ ‘ AC‘ @?E@=BA C ‘ A‘ C@ @ B@‘ =? ‘ JA?@ ‘E @‘ A‘ =? ‘ F‘AG?@C%‘= ‘ 1‘ F‘D@C A?‘G@C@‘ F@! C @‘=?E‘ =G1 ‘AG?@C% ` F@‘ F= ‘ I@‘ > ‘A1‘1@ A? %‘=?E‘I@ ?>‘ A?B @E‘ F@C@A1‘ F= ‘F@‘ =I @%‘= ‘ F@‘E C@ A?‘A1‘ F@‘ A C %‘ A‘ I@‘<@D ‘ ?‘D@?= ‘ @CB E@‘ 1AC‘ 1@‘AC‘1AC‘=? ‘ @CJ%‘?A ‘ @ ‘ F=?‘1 B@‘ @=C %‘AC‘ A‘ I@‘ JDC A?@E‘ 1AC‘=? ‘ @CJ‘?A‘@] @@E ?>‘ GA‘ @=C %‘G! F‘AC‘G FA ‘I=CE‘ =IA C%‘ =?E‘G F‘AC‘G FA ‘ A =C ‘ A?1 ?@J@?

@ ‘ 8‘ 1‘ =? ‘ D@C A?‘ G FA ‘ =G1 ‘= FAC ‘AC‘ @] @%‘ F@‘ DCAA1‘GF@C@A1‘ F= ‘ @‘A?‘ F@‘D=C ‘= @E%‘@?>C=B@ ‘AC‘ J=<@ ‘A?‘ =? ‘D = @%‘ GAAE%‘ A?@%‘AC‘ A F@C‘ J= @C = ‘ = Z ‘ A <‘ @C 1 = @‘ AC‘ A DA?‘D CDAC ?>‘ A‘ I@‘ F‘=‘ A <‘ @C 1 = @‘AC‘ A DA?‘ = ‘ =1AC@T = E%‘ AC‘ A‘ I@‘ F‘ =‘ A <‘ @C 1 = @‘ AC‘ A DA?‘= ‘ =1AC@ = E‘ ?‘ I =?<%‘ AC‘ A‘I@‘ =‘D=C ‘A1‘ F‘ =‘ A <‘ @C 1 = @‘AC‘ A DA?‘ = ‘ =1AC@T = E% ` AC‘ @ ‘ =? ‘ F‘D = @%‘GAAE%‘ A?@%‘AC‘A F@C‘ J= @C = ‘1AC‘ F@‘ J =< ?>‘AC‘DC ? ?>‘A1‘=? ‘ F‘ A <‘ @C 1 = @‘AC‘ A DA?%‘AC‘ I =?< A <‘ @C 1 = @‘ AC‘ A DA?‘ = ‘ =1AC@ = E%‘ AC‘ =? ‘ D=C ‘ F@C@A1‘C@T D@ B@ % ` AC‘<?AG ?> ‘F= ‘ ?‘F ‘ AE ‘AC‘DA @ A?‘=? ‘ F‘ D = @%‘GAAE%‘ A?@%‘AC‘A F@C‘ J = @C =F ` AC‘ <?AG ?> ‘A11@C %‘ @C %‘ E DA @ ‘A1%‘AC‘ D ‘A11%‘AC‘ F= ‘ ?‘ F ‘ AE ‘AC‘DA @ A?%‘=? ‘ D=D@C‘A?‘GF F‘=? ‘ F‘ I =?<‘ A <‘ @C 1 = @‘AC‘ A DA?‘ = ‘ =1AC@T = E%‘AC‘D=C ‘ A1‘=? ‘ F‘ A <‘ @C 1 = @‘AC‘ A DA?‘ = ‘ =1AC@ = E%‘ ‘ J =E@‘AC‘DC ? @E% ` F@‘ F= ‘ I@‘ > ‘A1‘1@ A? %‘=?E‘ I@ ?>‘ A?B @E‘ F@C@A1‘ F= ‘ I@‘ =I @‘= ‘ F@‘E C@ A?‘A1‘ F@‘ A C %‘ A‘ I@‘<@D ‘ ? D@?= ‘ @CB E@‘1AC‘ =? ‘ @CJ‘?A‘@] @@E ?>‘1A C @@?‘ @=C ‘ =?E‘?A‘ @ ‘ F=?‘1 B@‘ @=C %‘AC‘ A‘I@‘ JDC A?@E‘1AC‘=? ‘ @CJ‘?A‘@] @@E ?>‘ GA‘ @=C %‘ G F‘ AC‘ G FA ‘ F=CE‘ =IA C%‘ =?E‘ G F‘ AC‘ G FA ‘ A =C ‘ A?1 ?@J@?

@ ‘ ‘ 1‘=? ‘D@C A?‘1AC>@‘AC‘= @C %‘AC‘A11@C %‘ @C %‘E DA @‘A1%‘AC‘D ‘A11%‘<?AG ?>‘ F@‘ =J @‘ A‘I@‘1AC>@E‘AC‘= @C@E%‘=? ‘ @C 1 = @‘ AC‘E D = @‘ @C 1 = @‘C@b C@E‘I ‘5=C ‘3 ‘A1‘ F@‘ "= A?= ‘ #@I ‘ %‘ 9. %‘AC‘I ‘=? ‘1AC J@C‘ <@‘ @?= J@? %‘G F‘ ? @? ‘ ?‘=? ‘A1‘ F@‘ = @ ‘ =1AC@ = E‘ A‘ E@1C= E%‘F@‘ F= ‘ I@‘ > ‘A1‘1@ A? %‘=?E‘ I@ ?>‘ A?B @E‘ F@C@A1‘ F= ‘ I@‘ =I @%‘= ‘ F@‘E C@ A?‘A1‘ F@‘ A C %‘ A‘ I@‘<@D ‘ ?‘ D@?= ‘ @CB E@‘ 1AC‘ 1@%‘AC‘1AC‘=? ‘ @CJ‘?A‘ @ ‘ F=?‘1 B@‘ @=C %‘AC‘ A‘I@‘ JDC A?@E‘1AC‘=? ‘ @CJ‘?A‘@] @@E ?>‘ GA‘ @=C %‘ G F‘ AC‘ G FA ‘ F=CE‘ =IA C%‘ =?E‘ G F‘ AC‘ G FA ‘ A =C ‘ A?1 ?@J@?

@ ‘ . ‘ @ A? ‘ GA‘=?E‘1A C‘=?E‘= ‘DCAB A? ‘C@ = B@‘ F@C@ A‘ A1‘ F@‘ ‘ E@ C I@E‘ ?‘ F@‘ F@E @‘ A‘ F ‘ %‘=?E‘= ‘ @?=

= ' ?' J =< ?>%' =? ' D=D@C' ?' F@' I =? @' Ai'GF F' F= ' =DD@=C'
=? 'E ?> F ?>' J =C< ' D@ =C' A' =?E' =DD@=C ?>' ?' F@' I =? @'
A1' =? ' D=D@C' DCAB E@E' AC' A' I@ ' DCAB E@E' AC' @E' 1AC' @] F@b @C' A %'
AC' =? ' D=C ' A1' F' E ?> F ?>' J =C< %' =?E' ? @?E@E' A' J = @'
F@' = J @' ;' =?E' = A' @B@C ' D@C A?%' @] @D ' = ' I@1AC@' @] @D @E%' GFA'
F= ' <?AG ?> v '' F=B@' ?' F ' DA @ A?%' G FA ' =G1 ' @] @' N F@'
DCAA1' GF@C@A1' F= ' @' A?' F@' D@C A?' = @Ed%' ? ' D=D@C' GF= @B@C%'
?' F@' I =? @' GF@C@A1' F= ' =DD@=C' =? ' F' E ?> F ?>'
J =C< %' AC' =? ' D=C ' A1' F' E ?> F ?>' J =C< %' =?E' ? @?E@E' A'
J = @' F@' = J @;' =?E' = A' @B@C ' D@ A?%' @] @D ' 6 ' I@1AC@' @] @D @E%'
GFA' F= ' = @' AC' = >Z ' ?' = ?>' =? ' F' E ?> F ?>' J =C< '
AC' =? ' D=C ' A1' F' E ?> F ?>' J =C< %' =?E' ? @?E@E' A' J = @'
F@' = J @%' A' =DD@=C' ?' F@' I =? @' A1' =? ' RD=D@C' GF= @B@C%' AC'
GFA' F= ' =<@' AC' = ' ?' =< ?>' =? ' J DC@ A?' A1' =? ' F' E 6 '
AC' E @' = ' =1AC@ = E%' F= ' I@' > ' A1' 1@ A?

S ' "L' ' @ ' - %' B@C ' D@C A?' ?A ' =G1 '= FAC K@E' =?E' G FA ' =GT
% 4' ' E 1 ' @] @' N F@' DCAA1' GF@C@A1' F= ' @' A?' F@' D@C A?' = @Ed%' GFA'
' ' % # F= ' D C F= @%' AC' C@ @ B@%' AC' =<@%' ' E ' F=B@' ?' F ' AE ' =? '
, ' % 4' ' D=D@C' J =? 1= C@E' =?E' DCAB E@E' I ' AC' ?E@C' F@' E C@ A? ' A1'
$ $ F@' C@= C %' 1AC' F@' D CDA @' A1' I@ ?>' @E' = ' @] F@b @C' I %'
I@1AC@' F' D=D@C' F= ' F=B@' I@@?' E ' = J D@E%' >?@E%' =?E'
@E' 1AC' D I ' @%' AC' =? ' F' D = @' AC' E @' = ' =1AC@ = E%' F= ' 1AC'
@B@C ' F' A11@? @' F@' > ' A1' =' J E@ J @=?AC%' =?E%' I@ ?>' A?T
B @E' F@C@A1%' F= %' = ' F@' E C@ A?' A1' F@' A C ' I@1AC@' GFA J ' F@'
F= ' I@' C @E%' I@' J DC A?@E' 1AC' =? ' D@C A ''?A ' J AC@' F=?' FC@@'
@=C ' ?AC' @ ' F=?']' = @?E=C' J A? F

' E ' @ ' -8%' ' F@' DCAB A? '=?E' D@?= @ ' A1' F ' ' A? = ?@E'
7 ' ' 8E ?' @ A? ' 9%' %' % % -% % : %' 8%' %' .%' 9% %- %- %' --%' =?E'
' ' ' A? - %' F= ' I@' =DD @E!' =?E' @] @?E@E' A' F' @] F@b @C' I ' J=E@'
3 **= A ' =?E' @E' ?' D C =? @' A1' =? ' 1AC J @C' ' AC' ' =' F= '
C@ J = ?' A =?E ?>' =1 @C' F@' A J J @? @ J @? ' A1' F '

' E ' @ ' - %' F@' @B@C=' @ A? ' %' : %' 8%' %' : %' %' .%' 9% %' - %'
7 ' ' # ' - %' --%' - %' =?E' - :' A1' F ' %' =DD =I @' A' @] F@b @C' I %' F= '
: ' ' 8 ' =DD ' =?E' I@' A? C @E' A' =?E' ?' C@ = A?' A' = ' @] F@b @C' IA?E '
' ' 38 # E A' I@' J =E@' A ' =?E' @E' 1CA J' =?E' =1 @C' Z;F@' A J J @? @ J @? ' A1'
<% ' ; F ' ' ?E@C' F@' =? FAC ' A1' =? ' ' AC' ' A1' 5=C = J @? %' =' '
G@ ' = ' A' F' @] F@b @C' IA?E ' J =E@' A ' =?E' @E' ?' D C =? @'
A1' =? ' 1AC J @C' ' AC' %' = ' F= ' C@ J = ?' A =?E ?>' =1 @C' F@'
A J J @? @ J @? ' A1' F ' %' A' 1=C' = ' F@' = J @' = 4@ =DD =I @%' ?'
<@' J =??@C' =?E' = ' 1 ' =?E' @11@ = ' A' = ' ? @? ' =?E' D CT
DA @ ' = ' 1' F' @B@C=' @ A? ' F=E' I@@?' D=C =C ' C@D@= @E' =?E'
RL= @E' ?' F ' ' ?' C@ = A?' A' F' @] F@b @C' IA?E ' $ DCAB E@E'
= G= ' F= ' F' @] F@b @C' IA?E ' J = ' I@' J =E@' A ' =?E' @E' 1CA J'
=?E' =1 @C' F@' A J J @? @ J @? ' A1' F ' %' G F' A DA? ' 1AC' F@'
? @C@ ' I@ A J ?>' E @' F@C@A?' 1CA J' J @' A' J @' 1AC' =? ' @C J'
?A ' @] @@E ?>']' @=C ' 1CA J ' F@' E= @' F@C@A1

' ! ' ' F@' 8' 3 @ ' ' 9%' @? @E%' 7 ?' ' 1AC' ?E ?>'] F@b @C'
%H I ' @ ' - ' @?= %' F= ' 7 1' =? ' D@C A?' AC' D@C A? ' F= ' 1AC>@'
AC' A ? @C1@ %' AC' = @' AC' DCA C@' A' I@' 1AC>@E' AC' A ? @C1@ @E%' AC'
F= ' G ?> ' = ' AC' = ' ?' F@' 1AC> ?>' AC' A ? @C1@ ?>' =? ' '
C@ @ D ' AC' C@ @ D ' 1AC' F@' GFA @' AC' =? ' D=C ' AC' D=C ' A1' F@' = E'
I C D A?' AG=CE ' F@' = E' J' A1' 1 B@' J A? %' @ F@C' G F' AC'
G FA ' F@' ?= J @' AC' ?= J @ ' A1' =? ' D@C A?' AC' D@C A? ' I@ ?>' ?T
@C @E' F@C@ ?' = ' F@' I C I@C' AC' I C I@C ' F@C@ A%' AC' D= @C' AC

LD= @C ' F@C@A1% AC' A1' =? ' D=C ' AC' D=C ' ! F@C@A1% AC' F= ' = @C' =L'
? J I@C% 1 > C@% AC' GAC:' F@C@ ?% AC' @C' AC' D I F' = ' C @' =?"
F' 1= @% 1AC>@E% A ? @C1@ @E% AC' = @C@E' C@ @ D ' AC' C@ @ D % G '
? @? ' A' E@1C= E' F@' >AB@C?AC' =?E' AJD=? ' A1' F@' =?<' A1' ?>'
=?E% AC' =? ' IAE ' DA ' AC' ACDAC= @% AC' =? ' D@C A?' AC' D@C A?'
YGF= A@B@C%!@B@C ' F' D@C A?' AC' D@C A? ' A' 1AC> ?>' AC' A ? @C'
1@ ?>% AC' = ?>' Qa C' DCA C ?>' A' I@' 1AC>@E' AC' A ? @C1@ @E% AC'
G ?> ' = ?>' AC' = ?>' ?' F@' 1AC> ?>' AC' A ? @C1@ ?>% AC'
= @C ?>% @C ?>% AC' D I F ?>' = ' =1AC@ = E% I@ ?>' F@C@A1' A?T
B @E' ?' E @' 1 C J ' A1' =G%L' F= ' I@' =EZ E>@E' > ' A1' 1@ A? %
=?E' =I @' A' I@' C=? DAC @E' I@ A?E' F@' @= ' 1AC' 1@' AC' 1AC' =? '
@C J ' ?A ' @ ' F=?' @B@?' @=C % N d' AC' A' I@' J DC A?@E' 1AC' =? ' @C J '
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B A? ' A1' F@' ' 3 @ ' ' 9: H

F@' 8' @A ' :% ' 8 %@? @E% 7 ?' ' A' D@C J ' F@' * = ' ' 9 ' ' ' '
C=? 1@C' A1' =D = ' ?' @C = ?' 5 I ' A < ' AC' ?E ' C=? 1@C=I @' S ' % E
= ' F@' =?< ' A1' ?> =?E' =?E' C@ =?E' C@ D@ B@ %H I ' @ ' --% '
@?= ' F= ' 7 1'=? ' D@C A?' H* D@C A? ' F= ' 1AC>@' AC' A ? @C1@ % AC' % ' # ' '
= @' AC' DCA C@' A' I@' 1AC>@E' AC' A ? @C1@ @E% AC' F= ' G ?> ' = ' 9 ' ' '
AC' = ' ?' F@' 1AC> ?>' AC' A ? @C1@ ?>' =? ' @C 1 = @' AC' E D = @'
@C 1 = @' C@b C@E' I ' F % AC' F= ' = @C' =? ' ? J I@C% 1 > C@% AC'
GACE' F@C@ ?% AC' F= ' = @C' z' AC' D I F' = ' C @' =? ' F' 1= @%
1AC>@E% A ? @C1@ @E% AC' = @C@ED@C 1 = @% G F' ? @? ' A' E@1C= E' F@'
>AB@C?AC' =?E' AJD=? ' A1' F@' =?<' A1' ?> =?E% AC' F@' >AB@C?AC'
=?E' AJD=? ' A1' F@' =?<' A1' C@ =?E% AC' =? ' IAE ' DA ' AC' ACDAT
C= @% AC' =? ' D@C A?' AC' D@C A? ' GFAJ A@B@C% @B@C ' F' D@C A?' AC'
D@C A? ' A' 1AC ?>' AC' A ? @C1@ ?>% AC' = ?>' AC' DCA C ?>' A' I@'
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AC' A ? @C1@ ?>% AC' = @C ?>% @C ?>% AC' D I F@E' z% = ' =1AC@T
= E% I@ ?>' F@C@A1' A?B @E' ?' E @' 1AC J ' A1' =G% F= ' I@' =EZ E>@E'
> ' A1' 1@ A? % =?E' F= ' 11@C' E@= F' = ' =' 1@ A?% G FA ' I@?@1 '
A1' @C> HNJd

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=CC A?' G= ' @? @E' A' ' ? @C@ ' AC' F=C@' ?' F@' A? A E= @E' ; ' % '
FC@@' D@C' @? % =?? @ ' ; =?E' F= ' GF ' & ' ' G= ' A' @? @E' % 4' ' '
A' F@' = E' ' , % F@' DC A?@C' 1= @ ' J=E@% 1AC>@E% =?E' A ?T $ '
@C1@ @E' =' C=? 1@C' A1' F@' = E' ' ? @C@ ' AC' F=C@% G F' F@' # '# $'
?= J @' A1' F@' = E' & ' ' F@C@ A' I C I@E% D CDAC ?>' A'F=B@' I@@?' " # ' '
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1CA J ' F@' = E' & ' ' ? A' A?@' & ' & % F@' @?AC' A1' GF F' G= % ' # '
, ' N @ ?>' ' A d' ; G F' ? @? ' A' E@1C= E' F@' >AB@C?AC' =?E' "' # ' 7 ' ; '
AJD=? ' A1' F@' =?<' A1' ?> =?E% A? C=C ' A' F@' 1AC J ' A1' Fu' ' ;4
= @% , ' ?' A F@C' A ? ' F@' ? @? ' G= ' ' E' A' I@' A' E@1C= E' #' ' ' '
& ' ' =?E' & ' & % =?E' ?' A F@C ' F@' DC A?@C' G= ' F=C>@E' G F' "# ' $ '
D I F ?>' F@' C=? 1@C% <?AG ?>' ' A' I@' 1AC>@E% G F' F@' =J @' # ' # ' E
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? @C@ ' =?E' F=C@% B K' ' ? @C@ ' =?E' F=C@' A1' =?E' ?' @C = ?' % ' '
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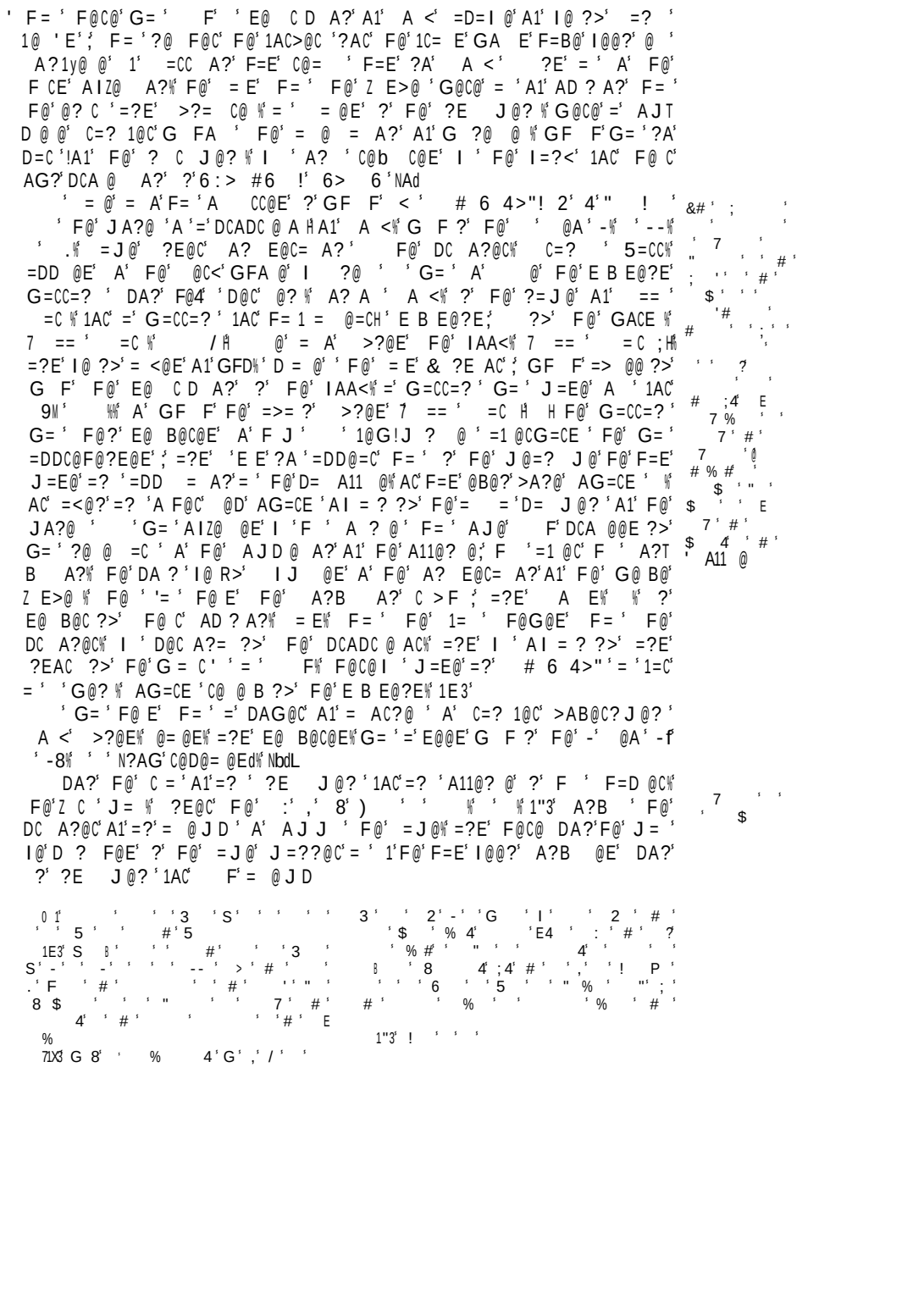
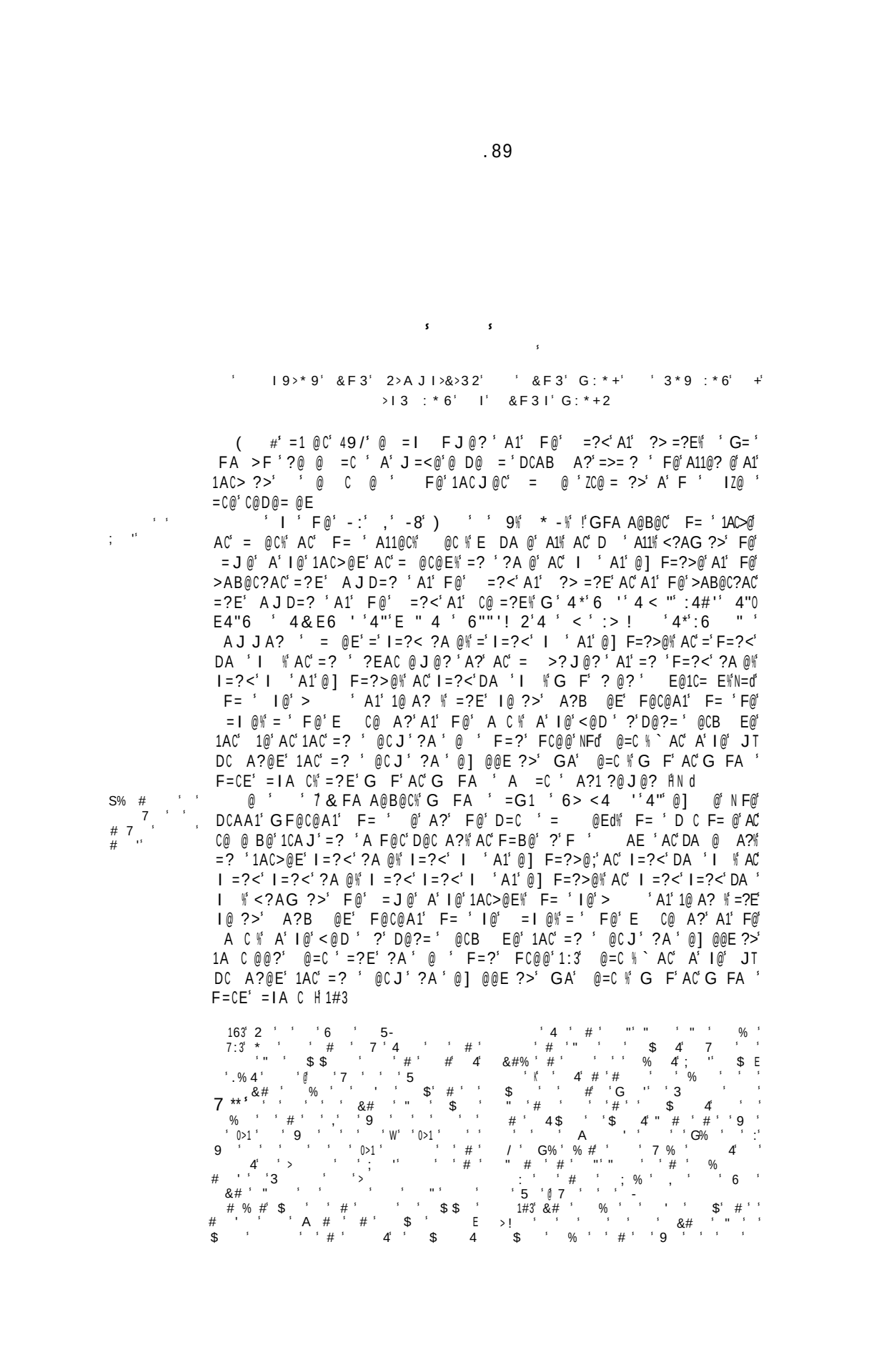




Proviso as to paper used for bills of exchange, &c.

Sec 15. 'Nothing in the last preceding section contained shall prevent any person from issuing any bill of exchange or promissory note having the amount thereof expressed in guineas, or in a numerical figure or figures denoting the amount thereof in pounds sterling, appearing visible in the substance of the paper upon which the same shall be written or printed, nor shall prevent any person from making, using, or selling any paper having waving or curved lines or any other devices in the nature of watermarks visible in the substance of the paper, not being bar lines or laying wire lines, provided the same are not so contrived as to form the groundwork or texture of the paper, or to resemble the waving or curved laying wire lines or bar lines or the watermarks of the paper used by the governor and company of the Banks of England and Ireland respectively.' (*g*)

Engraving or having any plate, &c., for making notes of Bank of England or Ireland, or other banks, or having such plate, &c., or uttering or having paper upon which a blank bank note, &c., shall be printed.

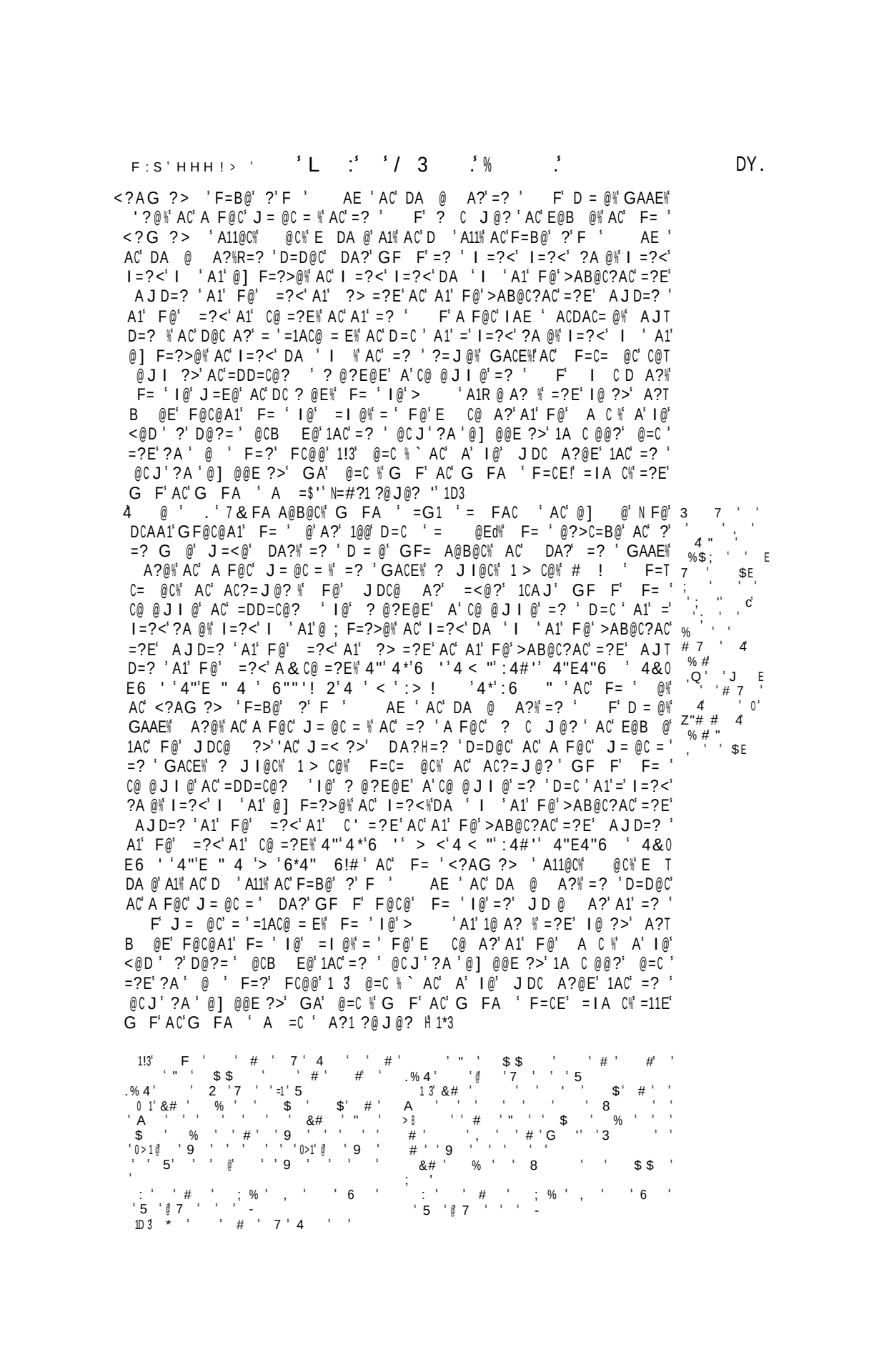
Sec. 16. 'Whosoever, without lawful authority or excuse (the proof whereof shall lie on the party accused), shall engrave or in anywise make upon any plate whatsoever, or upon any wood, stone, or other material, any promissory note, bill of exchange, *or bank post bill*, or part of a promissory note, bill of exchange, *or bank post bill*, purporting to be a bank note, bank bill of exchange, or bank post bill of the governor and company of the Bank of England or of the governor and company of the Bank of Ireland, or of any other (*h*) body corporate, company, or person carrying on the business of bankers, or to be a blank bank note, blank promissory note, blank bank bill of exchange, or blank bank post bill of the governor and company of the Bank of England or of the governor and company of the Bank of Ireland, or of any such other body corporate, company, or person as aforesaid, or to be a part of a bank note, promissory note, bank bill of exchange, or bank post bill of the governor and company of the Bank of England or of the governor and company of the Bank of Ireland, or of any such other body corporate, company, or person as aforesaid, or any *name*, word, *or character* resembling or apparently intended to resemble any subscription to any bill of exchange or promissory note issued by the governor and company of the Bank of England or the governor and company of the Bank of Ireland, or by any such other body corporate, company, or person as aforesaid, or shall use any such plate, wood, stone, or other material, or any other instrument or device, for the making or printing any bank note, bank bill of exchange, or bank post bill, or blank bank note, blank bank bill of exchange, or blank bank post bill, or part of a bank note, bank bill of exchange, or bank post bill, or

the words 'or the greater part of such words' for which the Select Committee of the Commons substituted 'any part of such words intended to resemble and pass for the same,' as the greater part of the words 'Bank of Ireland' or 'Bank of England might be visible in paper, and yet might neither resemble nor be intended to resemble either of those expressions.

As to hard labour, &c., see *ante*, p. 738; vol. 1, p. 80.

(*g*) This clause is taken from the 1 Will. 4, c. 66, s. 14, and is new in Ireland.

(*h*) To engrave upon a plate part of a note purporting to be a note of a Scotch banking company, is an offence within this section, and that effect of the section is not prevented by section 55, which provides that nothing in the Act contained shall extend to Scotland. R. *v.* Brackenridge, 37 L. J. M. C. 86. See 24 & 25 Vict. c. 98, s. 40, *ante*, p. 734. See Dick's case, 1 Leach, 68, 2 East, P. C. c. 19, s. 35, p. 925; M'Kay's case, R. & R. 71, cases decided on 2 Geo. 2, c. 25: R. *v.* Kirkwood, R. & M. C. C. R. 130, decided upon 1 Will. 4, c. 66.



Cases upon Repealed Statutes.

Cases upon the repealed statutes.

A case has been already noticed in which it was holden, upon the 8 & 9 Will. 3, c. 20, s. 36, that the expunging by means of lemon-juice an indorsement on a bank note, was a *rasing* of the indorsement. (*m*) And in the inquiry in a former chapter as to the resemblance which the forged instrument must bear to one that is genuine, a case upon the 15 Geo. 2, c. 13, s. 11, was mentioned, where it was holden that the resemblance to a bank note must appear on the face of the instrument; and that a signature 'for Self and Co.' of 'my bank in England,' did not support an allegation that the paper purported to be a bank note; and further, that the representation of the prisoner could not alter the purport of the instrument. (*n*)

Possession of a forged note.

The 45 Geo. 3, c. 89, s. 6, made it felony if any person should knowingly have 'in his, her, or their possession or custody,' &c., any forged bank note, &c., and in a case upon this section, in which the circumstances necessary to constitute 'the having in possession' of forged notes, came under the consideration of the judges, they seemed to be of opinion, that every uttering included having in custody and possession within the statute; and some of them thought, that without actual possession, if the notes had been put in any place under the prisoner's control, and by his direction, the result would have been the same. (*o*)

As to what constitutes an uttering.

In a case upon the 13 Geo. 3, c. 79, s. 2, which subjected to imprisonment any person who should 'knowingly and wilfully publish or utter any promissory note' of the description therein mentioned, it was holden that shewing to a person an instrument in the manner there adopted with an intent to raise a false idea of the party's substance, did not come within its provisions; and also that the leaving it afterwards, sealed up, with the person to whom it was shewn, under cover, that he might take charge of it, as being too valuable to be carried about, was not an uttering or publishing. (*p*)

Where one of the prisoners knowingly delivered a forged bank note to the other prisoner for the purpose of its being knowingly uttered by her, and she uttered it accordingly, it was holden that the prisoner, who de-

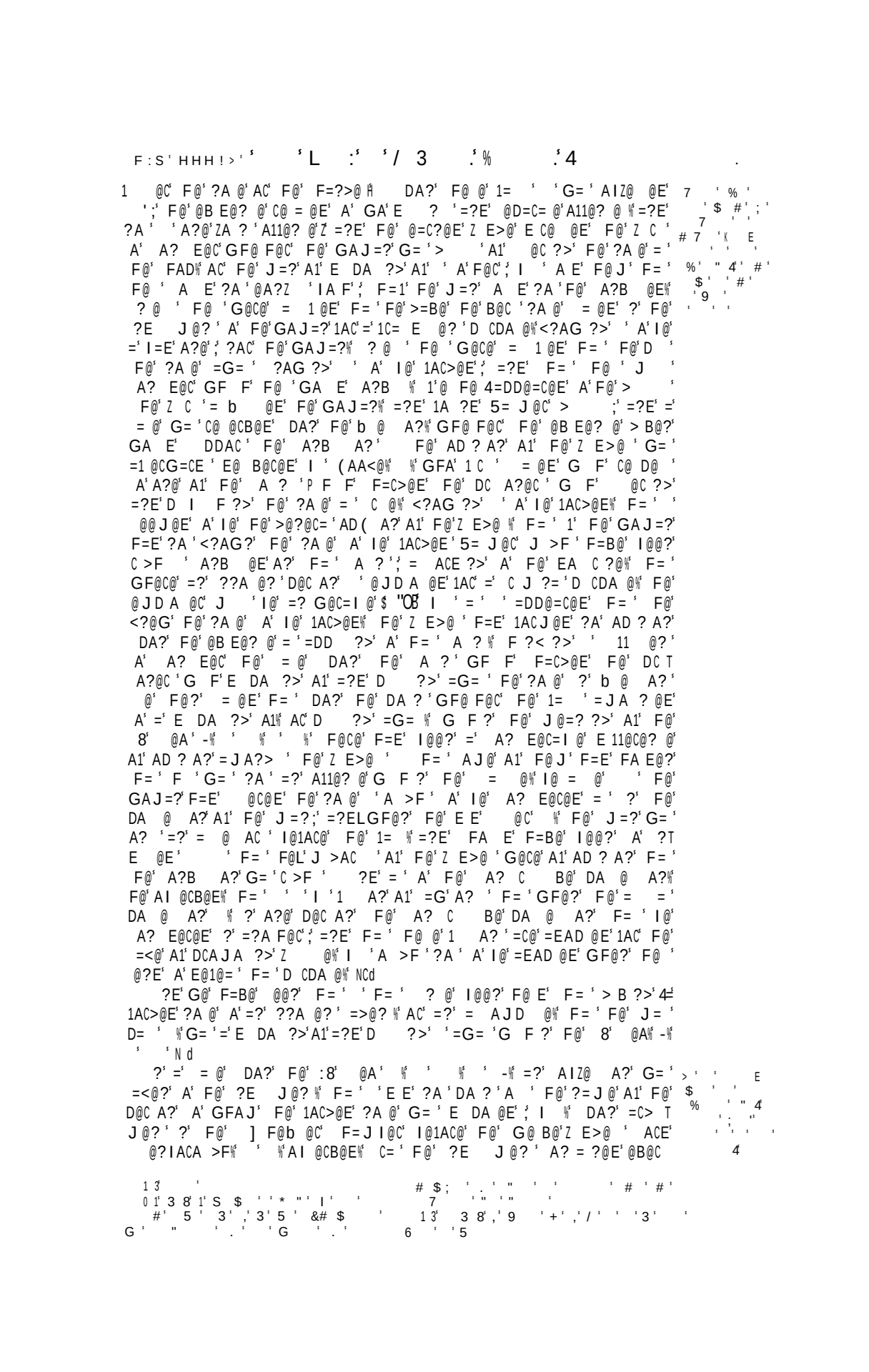
The indictment under the 15 Geo. 2, c. 13, s. 11, charged Palmer and Hudson in one count with feloniously disposing of and putting away a forged bank note, knowing it to be forged. Palmer had been in the habit of putting off forged bank notes, and had employed Hudson in putting them off; on a certain day being at a public house, he sent out Hudson with the forged note in question, for the purpose of passing it; she went to a neighbouring shop, purchased some handkerchiefs for six shillings, and tendered the note in payment, which was suspected and stopped; and, upon examination, appeared to be forged; on the evening of the same day, Palmer went with her to the shop, and when he got there said, 'This woman has been here to-day, and offered a two pound note, which you have stopped; it is my note, and I must have

(*m*) Rex *v.* Bigg, 3 P. Wms. 419, *ante*, p. 625.

(*n*) Jones's case, *ante*, p. 666.

(*o*) Rex *v.* Rowley, R. & R., 110, and see the 24 & 25 Vict. c. 98, s. 45, *ante*, p. 736.

(*p*) Rex *v.* Shukard, R. & R. 200. See this case at length, *ante*, p. 720.



aver to whom the notes were put away.

word which the statute uses for constituting the offence; and that the statute did not contain the words, 'to any person or persons,' but to put off with intent to defraud the governor and company of the Bank of England; and the judges held the indictment to be sufficient. (*t*)

This offence may be committed though the notes were furnished by the prisoners to agents employed by the bank to procure them from the prisoners, and the notes were delivered to such agents as forged notes for the purpose of being disposed of by them.

Another point arose in the same case upon the evidence, from which it appeared that the notes which the prisoners were charged with having disposed and put away were furnished by the prisoners in consequence of an application made to them by agents employed for that purpose by the bank, and that they were delivered to such agents as forged notes, for the purpose of being disposed of by them. In consequence of a great number of forged notes having been circulated in the neighbourhood, Shaw and Whitehead were employed by the magistrates, with the approbation of the agents for the bank, to detect those who were suspected to be the utterers. The prisoners did not pay the notes to Shaw and Whitehead as genuine; but those persons, for the purpose of detection, applied to the prisoners, as supposed dealers in forged bank notes, to purchase them, and the prisoners accordingly procured them, and sold them as forged notes, so that Shaw and Whitehead were not deceived or defrauded in any of the instances, nor were any of the prisoners the first movers in the transaction they had with them; nor did it appear, by any direct evidence, that either of the prisoners, when he was first applied to, had any of the notes in his actual possession; but they respectively produced them at meetings which took place subsequent to such first application. Upon this evidence it was objected that there was no sufficient disposing of the notes, as the prisoners were solicited to commit the act proved against them by the bank themselves, by means of their agents. The objection was overruled, and a case was reserved in order that the point might be considered by the twelve judges, who held the conviction right. (*u*)

Evidence of guilty knowledge where the party is charged with uttering, &c., forged notes, &c., knowing the same to be forged.

We have seen that the offering, disposing of, receiving, or having possession of forged bank notes, &c., *knowing the same to be forged*, are made substantive offences by the statutable enactments which have been cited; (*v*) and the knowledge of the forgery, or, as it is commonly termed, *the guilty knowledge*, will, of course, in prosecutions for such offences, form a most material part of the inquiry. The principal cases upon this subject are mentioned in a former chapter, treating generally of the crime of forgery. (*w*)

Bank prosecutions. Practice. Election to proceed for minor offence.

In a case where the Bank of England had preferred a bill of indictment for the capital offence of disposing of and putting away forged Bank of England notes, and also another bill against the same prisoners for the transportable offence of having the *same notes* in their possession, knowing them to be forged, and had elected to proceed on the latter indictment, it was holden that, although facts sufficient to support the capital charge were made out in evidence, an acquittal for such minor offence ought not to

(*t*) Rex *v.* Holden, 2 Taunt. 334. 2 Leach, 1019. R. & R. 154.

(*u*) Rex *v.* Holden, *supra*. The ground on which this decision proceeded, was that the intent is the essence of the crime, which exists in the mind, although from circumstances of which the prisoner is not apprised the prosecutor cannot be defrauded.

(*v*) *Ante*, p. 758, *et seq.*

(*w*) *Ante*, p. 728.

within the jurisdiction of the Central Criminal Court; but after full argument upon a case reserved, the judges were all of opinion that the offence charged was within the statute, except Parke, B., Alderson, B., and Coleridge, J., who entertained some doubt, and the conviction was affirmed. (*a*)

Upon an indictment on the 41 Geo. 3, c. 57, s. 2, (now repealed), which charged the prisoner with having in his custody a plate on which was engraved part of a promissory note, purporting to be the promissory note of a body corporate called the *British Linen Company*, it was objected that it was not an offence within this statute to have in custody a plate for making notes, &c., in the name of such company, though it appeared that they carried on business as bankers, because they were incorporated for a purpose entirely different, viz., that of carrying on a linen company; and it was also objected that the indictment was bad, as it omitted to aver that the company carried on the business of bankers, which the Act required. The objections having been reserved for the consideration of the judges, they seemed to be of opinion that the first objection was fatal; and were all of opinion that the indictment was bad, for the reason stated in the second, and that judgment should be arrested. (*b*)

What is a part of a note purporting to be part of a banker's note?

Upon an indictment under the 1 Will. 4, c. 68, s. 18, for engraving part of a promissory note, it appeared that the prisoner had cut out the centre part of a promissory note of the British Linen Banking Company, on which the whole of the promissory part of the note was written, and taken the ornamental border to a printer, representing that he wanted to have a plate made of this border, intending to fill up the centre with the title of some oil or cosmetic, of which the firm in whose employ he represented himself to be were the vendors. The printer applied to an engraver, from whom he obtained a plate, the impression from which showed that the royal arms of Scotland and the Britannia respectively occupied the same place on the plate as they would in an original note of the company; and, upon a case reserved, upon the question whether a plate having on it merely the royal arms of Scotland and the Britannia satisfied the words 'any part of any promissory note purporting to be part of a note, &c.,' it was held that the conviction was right. The word 'note' is not limited to the parts of a promissory note in a strict legal sense; but includes all that is upon the paper, upon which the note is written, (*c*) and in order to ascertain whether an engraving purports to be part of a note, the engraving must be compared with a genuine note. (*d*)

(*a*) Reg. *v.* Hannon, 2 Moo. C. C. R. 77. 9 C. & P. 11.

(*b*) Rex *v.* Catapodi, R. & R. 65.

(*c*) Per Coleridge, J.

(*d*) Reg. *v.* Keith, Dears. C. C. 486. This case was not argued for the prisoner, and seems open to very considerable doubt. The doubt is, whether there must not be such a portion engraved that on comparison it can clearly be seen that it purports to be part of a note of the particular company, and of no other company. Suppose two or more companies used the same border, how could any engraving of that border *purport* to be part of the note of any one of those companies? Or suppose a tradesman headed his bills, or a magistrate his warrants, with the same identical form of the royal arms as a banker put on his notes, how would any document with those arms alone on it purport to be one more than the other? The question is not what the prisoner intended the thing to be, but what it *purported* to be. C. S. G.

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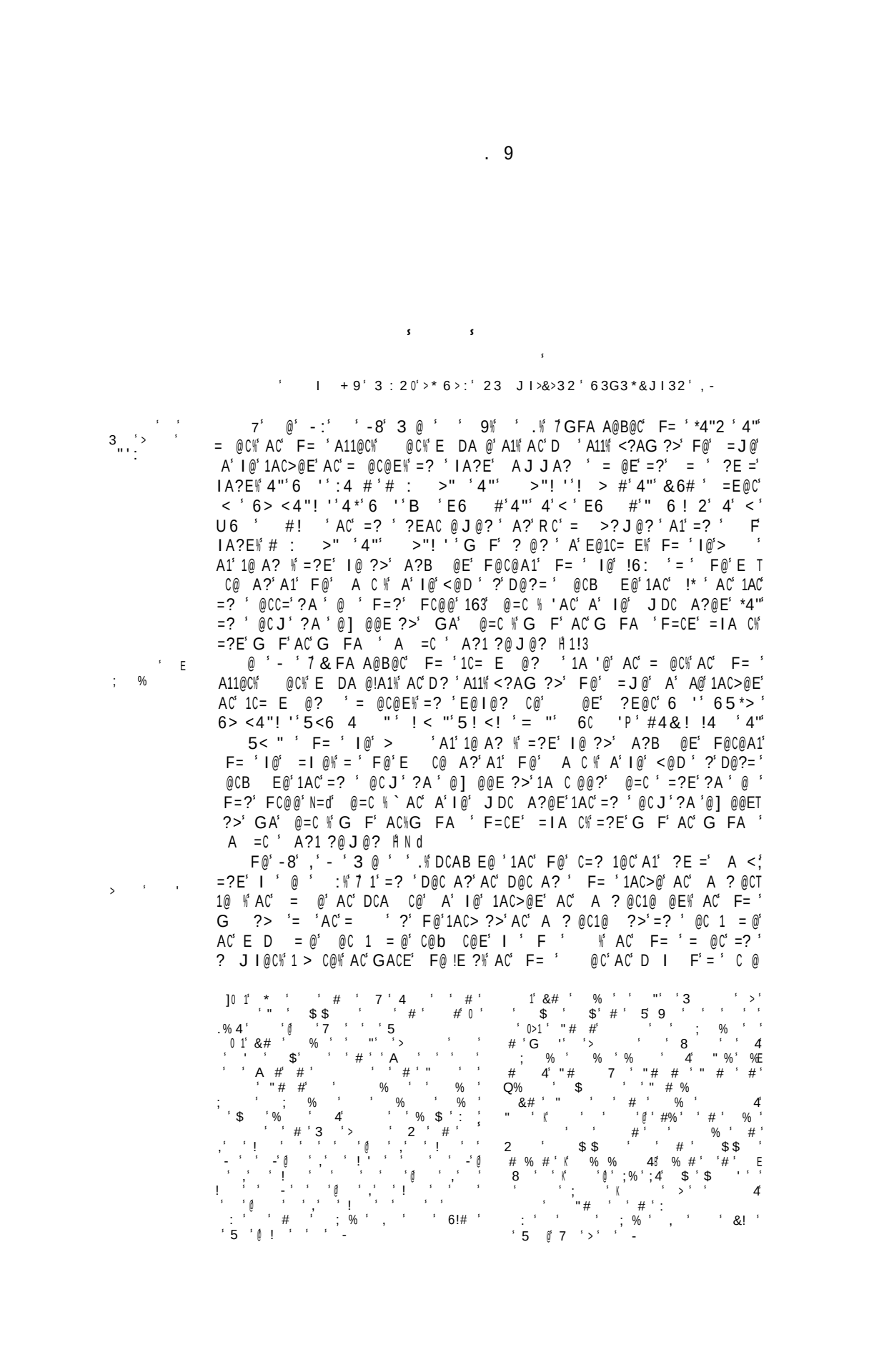

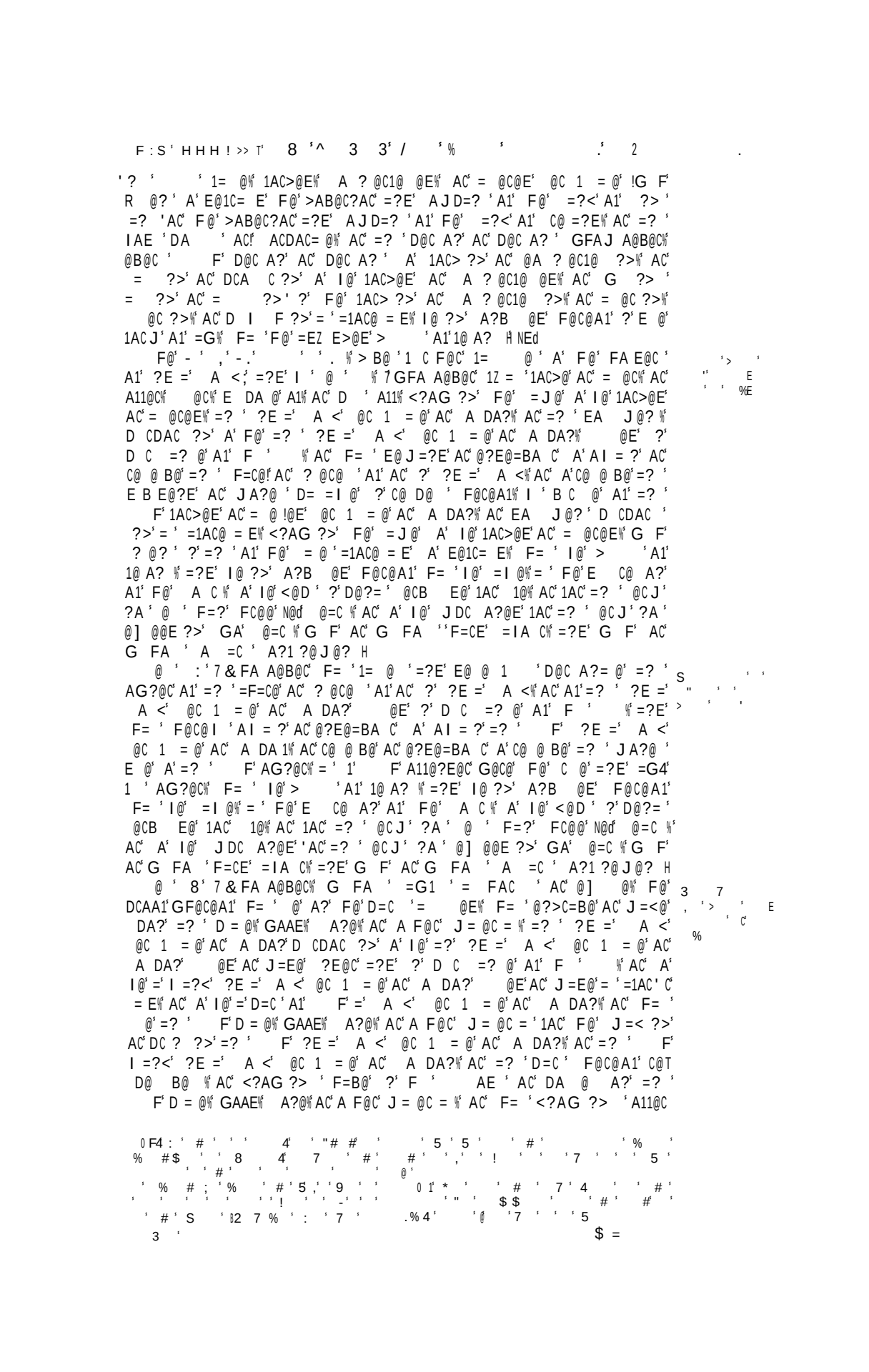

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rities for carrying this Act into execution, and shall observe and obey in relation thereto the directions of the commissioners of His Majesty's Treasury.

Sec. 4. Where by any act heretofore passed reference is made to the enactments relating to stamp duties in force at the time of the passing of such Act, such reference shall after the passing of this Act be read and construed as a reference to this Act, instead of the said enactments.

Criminal offences relating to stamps.

Sec. 18. Any person who does, or causes, or procures to be done, or knowingly aids, abets, or assists in doing, any of the acts following, that is to say,

(1) Forging a die or stamp:

(2) Making an impression upon any material with a forged die:

(3) Fraudulently cutting, tearing, or in any way removing from any material any stamp, with the intent that any use should be made of such stamps or of any part thereof:

(4) Fraudulently mutilating any stamp, with intent that any use should be made of any part of such stamp:

(5) Fraudulently fixing or placing upon any material, or upon any stamp, any stamp, or part of a stamp, which, whether fraudulently or not, has been cut, torn, or in any way removed from any other material, or out of or from any other stamp:

(6) Fraudulently erasing, or otherwise either really or apparently removing from any stamped material any name, sum, date, or other matter or thing whatsoever thereon written, with the intent that any use should be made of the stamp upon such material:

(7) Knowingly selling, or exposing for sale, or uttering or using any forged stamp:

(8) Knowingly, and without lawful excuse (the proof of which lawful excuse lies on the person accused), having in possession any forged die or stamp, or any stamp or part of a stamp which has been fraudulently cut, torn, or otherwise removed from any material, or any stamp which has been fraudulently mutilated, or any stamped material out of which any name, sum, date, or other matter or thing has been fraudulently erased or otherwise either really or apparently removed, is guilty of felony, and upon being convicted shall be liable to be subjected to penal servitude for the term of his natural life, or for any term not less than five years, or to be imprisoned for any term not exceeding three years.

Proceedings for the detection of forged dies, &c.

Sec. 19. On information given before any justice of the peace upon oath that there is just cause to suspect any person of being guilty of any of the offences aforesaid, such justice may, by a warrant under his hand, cause every dwelling-house, room, workshop, outhouse, or other building or place belonging to or occupied by the suspected person, or where he is suspected of being or having been in any way engaged or concerned in the commission of any such offence, or of secreting any forged die or stamp, or any machinery, implements, or utensils, applicable to the commission

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> ' A1' 1@ A? ' G FA ' I @?@1 ' A1' @C> %' 1#3

F @' -' ,' ' & ' :%' ' z' - %' @? @E' 7' ?' ' A' C@D@=' F@' E @'
?E@C' F@' J =?=>@ J @? ' A1' F@' A J J A?@C ' A1' = J D ' A?' =>@ '
=CC =>@ %' =?E' A?' FAC @ ' @ ' 1AC' F C@' ?' C@= ! C = F%' =?E' A' >C=?'
A F@C' E @ ' ?' @ ' F@C@A1%H C@D@= ' A' J F%' A1' F@' ' @A' 9%'
' 98%' T6 ' C@ = @ ' A' F@' E @ ' A?' A= F@ %' =?E' A?' @? @ %1AC'
<@@D ?>' =>@ A= F@ %' =?E' = 'C@ = @ ' A' Fp' A11@? @ ?' F@' = E' '
J @? A?@E' @ D@ ?>' F' E @ ' =?E' @? @ ';' H =?E' I ' @ ' -'
@?= %' 7' F= ' 1' =? ' D@C A?' F= ' 1AC>@' AC' A ? @C1@ %' AC' F= ' = @'
AC' DCA C@' A' I @' 1AC>@E%' A ? @C1@ @E' AC' 'Y@ @J I @E%' =? ' ? C= '
I @C@E' D = @' E C@ @E' A' I @' DCAB E@E%' AC' GF F' F= 'F=B@' I @@?' DCAT
B E@E%' J =E@%' AC' @E%' ?' D C =? @' A 1' F ' %' AC' A1' =? ' 1AC J @C'
' C@ = ?>' A' F@' E @ ' D= = I @' ?' C@ D@ ' A1' =>@ =CC =>@ %' AC'
F= ' G 1 ' 1]' AC' D = @%' AC' F= ' = @' XAC' D@C J %' AC' g 11@C' 1 ' I @'
1]@E' AC' D = @E%' DA?' =? ' =>@ =CC =>@' AC' A F@C' =CC =>@%' =? ' F'
1AC>@E' AC' A ? @C1@ @E' D = @%' AC' 1' =? ' D@C A?' F= ' @ ' AC' @] F=?>@%'
AC' @]DA @' A' = @%' AC' @C' =? ' F' 1AC>@E' AC' A ? @C1A @E' D = @%'
AC' 1' =? ' D@C A?' F= ' <?AG ?> %' =1 E' G FA ' =G1 ' @] @' N F@'
DCAA1' GF@C@A1' F= ' @' A?' F@' D@C A?' = @Ed' F=B@' AC' I @' DA @ @E'
A1' =? ' F' 1AC>@E' AC' A ? @C1@ @E' D = @%' <?AG ?>' F' D = @' A'
I @' 1AC>@E' AC' A ? @C1@ @E%' @B@C ' D@C A?' A' A11@?E ?>%' =?E' @B@1 '
D@C A?' <?AG ?> ' =?E' G 1 ' = E ?>%' = I @ ?>%' AC' = ?>' = '
D@C A?' ?' A J J ?>' =? ' F' A11@? @' = ' =1AC@ = E%' F= ' I @' =ET
Z E>@E' > ' A1' =' J E@ J @=?AC%' =?E' I @ ?>' F@C@A1' A?B @E%' F= '
I @' =I @' A' I @' D ? F@E' I ' 1 ?@' AC' J DC A?J @? %' AC' I ' IA F%' F'
ZJ DC A?J @? ' A' I @' ?' F@' A J J A?' >=A ' AC' FA @' A1' A?H@ A?%' =?E'
@ F@C' G F' AC' G FA ' F=CE' = IA C%' = ' F@' A C ' F= ' F ?<' 1 ';

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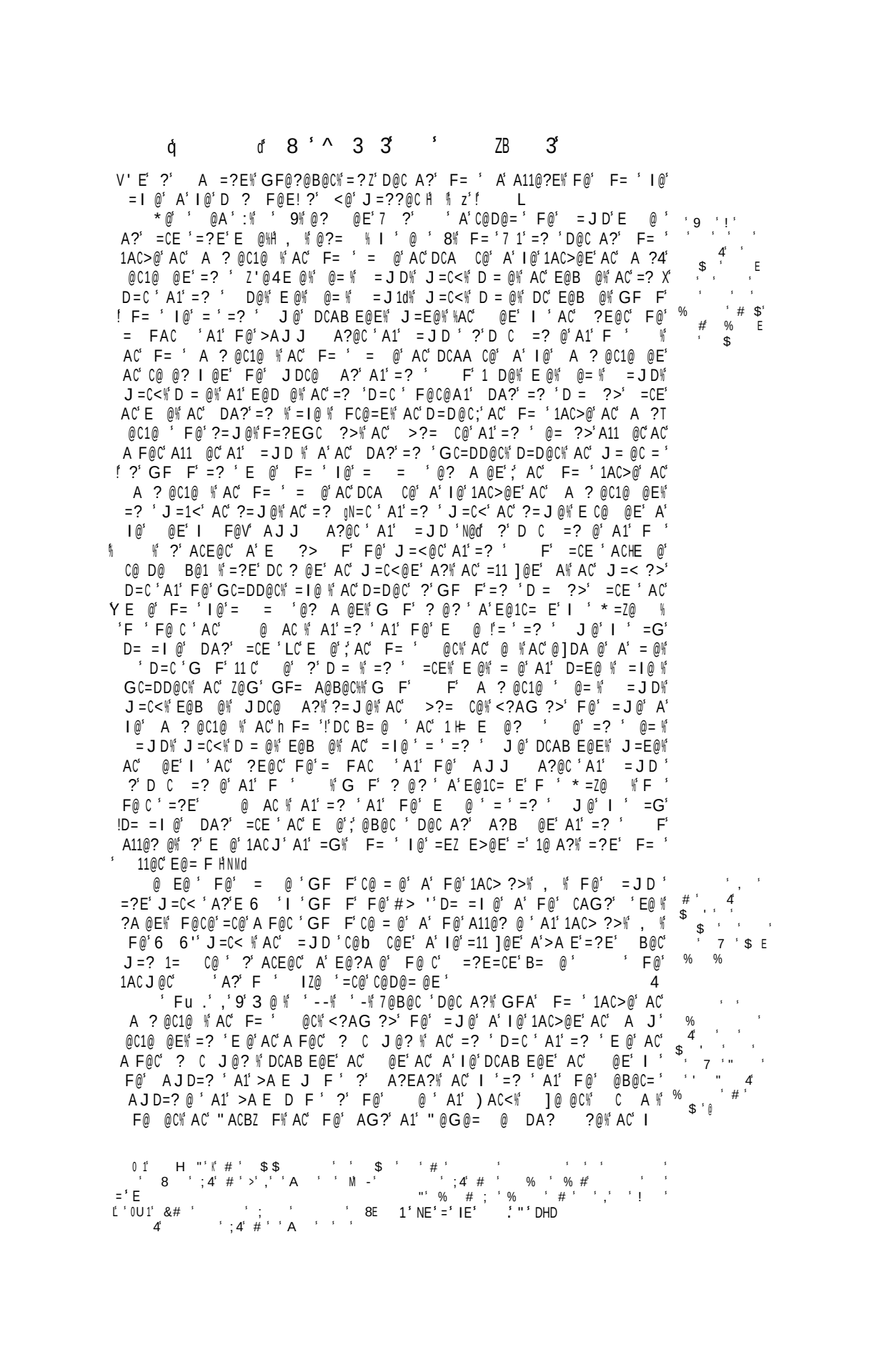

F@' AJD=? @ 'A1'> =CE =? 'A1' F@' =?E=CE'A1'GCA >F 'D = @' ?'
AG? 'A1' F@11 @ E'AC' CJ ?>F=J 'C@ D@ B@ %'1AC' F@' J =C< ?>' AC'
$ ' ' " ' =JD ?>'A1'=? '>A E'AC' B@C' G=C@ ';' =?E%@B@C 'D@C A?' GFA'QF= '
" #' ' J =C<' G F'=? ' F'1AC>@E'AC' A ? @C1@ ' E @'AC'A F@C' ? C J@? %'
' '% E AC'G F'=? 'D=C 'A1' F'1AC>@E'AC' A ? @C1@ 'E @'AC'A F@C' ? C T
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G=C@'A1'I= @' J @ = ' A' J =C<@E' = ' =1AC@ = E%'<?AG ?>' F@' =J @' A'I@'
' 4' A' J =C<@E' = ' =1AC@ = E' ;' =?E' @B@C 'D@C A?' GFA' Fg '1AC>@'AC' A ?T
$ '' ' 4' @C1@ %'AC' I '=? 'J @ 'GF= @B@C'DCAE @'=?' J = A?'A1%'AC' F= '
' '% L @C%'<?AG ?>' F@' =J @' A'I@'1AC>@E'AC' A ? @C1@ 'AC'=?' J = A?%'
=? 'J =C<' AC' D=C 'A1'=? 'J =C<' A1' =? 'E @'AC'A F@C' ? C J@? 'DCAT
B E@E'AC' @E'AC' A'I@'DCAB E@E'AC' @E' = ' =1AC@ = E' D ?' =? 'G=C@'
' ' A1'>A E'AC' B@C%'AC' =? 'G=C@'A1'I= @' J @ = ';' =?E'@B@C 'D@C A?'GFA'
$ 7 ' F= ' C=? DA @'AC'C@JAB@%'AC' F= ' @C%'<?AG ?>' F@' =J @' A'I@'
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'@ DCAB E@E'AC' @E'AC' A'I@'DCAB E@E'AC' @E' = ' =1AC@ = E%'1CAJ' =? '
G=C@'A1'>A E'AC' B@C' A' =? 'A F@C'G=1 $'A1'>A E'AC' B@C%'A' A' =? '
G=C@'A1'I= @' J @ = ';' =?E' @B@C 'D@C A?' GFA' F= 'G FA ' =G1 '@]T
# 7 ' ' @'N @'DCAA1'GF@C@A1' F= ' ! '4 ' < 'D=C ' = @Ed'F=B@' ?' F '
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% #' ' " ' = ' =1AC@ = E%'AC' =? 'G=C@'A1'>A E'AC' B@C%'AC' =? 'G=C@'A1'I= @'
' '@ J @ = %'F=B ?>' F@C@ DA?' F@' J =C<'A1'=? ' F'1AC>@E'AC' A ? @C1@ '
E @' C'A F@C' J ? ?@? ' = ' =1AC@ = E%'AC'F=B ?>' F@C@ DA?' =? ' F'
1AC>@E'AC' A ? @C1@ 'J =C<'AC' J = A?'A1' =' J =C<' = ' =1AC@ = E%'AC'
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= E%'<?AG ?>' F@' =J @'C@ D@ B@ 'A'F=B@'I@@?' 1AC>@E%' A ? @CT
% ' 1@ @E%' J = @E%' J =C<@E%' C=? DA @E%'AC'C@JAB@E;' =?E' @B@ 'D@C A?'
7 ' GFA' C= ' 'AC' @B@C'1CAJ' =? 'G=C@'A1'>A E'A ' B@C' =? J =C<'AC'
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% ' # ' @E' H S'I@'DCAB E@E'AC' @E' = ' =1AC@ = E%'G F' ? @? ' F= ' F'
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8 ' 4' AC'=11]@E' A' =? 'A F@C'G=C@'A1'>A E'A1' B@C%'AC' A' =? 'G=C@'A1'I= @'
$ '' %' ' J @ = ';' =?E' @B@C 'D@C A?'GFA' F= 'D = @' DA?'AC'ZA ?'AC'=11]' A' =? '
7 ' $' G=C@'A1'>A E'AC' B@C'AC' =? 'G=C@'A1'I= @' J @ = ' =? ' J =C<' A1' =? '
4' # ' E @'AC'A F@C' ? C J@? 'DCAB E@E'AC' @E'AC' A'I@'DCAB E@E'AC' @E'
" @ = ' =1A H@ = E%'GF F' F= 'F=B@'I@@?' 'AC' @B@C@E'1CAJ' =? 'G=C@'A1'
' % % 4' >A E'AC' B@C;' =?E' @B@C 'D@C A?'GFA' F= %'G F' ? @? ' A' E@1C= E'
% ' % ' F@C' * =Z@ %'AC'=? 'A1' F@' = E' @B@C= ' AJD=? @ ' A1' >A E J F '
' @ =?E'> =CE =? 'C@ D@ B@ %'AC'=? 'D@C A?'GF= @B@C%' @'=? '>@? ?@'
E @'AC'A F@C' ? C J@? 'DCAB E@E'AC' @E'AC' A'I@'DCAB E@E'AC' @E'
= ' =1AC@ = E%'=?E' @B@C 'D@C A?' A ? @ ?>%' = E ?>%'AC' =I @ ?>' =? '
4 F' A11@?E@C%' F= 'I@'> 'A1'1@ A? %'=?E' F= %' = ' F@' E C@ A?'
S% #$ A1' F@' A C%'@ F@C'I@' C=? DAC @E'123' I@ A?E' I@' @= '1AC'=? ' @C?'
?A '@] @@E ?>'1A C @@?' @= '?AC' @ ' F=?' @B@?' @=C%'AC' F@' JT
DC A?@E'G F'AC'G FA 'F=CE' =IA C'1AC' =? ' @CJ '?A '@] @@E ?>'
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H*W4"2! 2 6 #F"6 E4 ! 20 6&E $-% &

AC ?=A? @? @ 1 F@ E@1@?E=? J @=? A E@1C= E F@ >AB@C? J @? A1 ^ F@ > ; I = A E F=B@ I@@?? @= DCAB@E 1 F@ E F=E ?A I@@?? D= E A? * C ? < @ H @? @ =?E?A F @B E@? @ F= I@@?? > B@? F ?< A FA E DC@ J@ =1=BA C A1 ??A @? @) A G = GF@ F@C A F ?< F= F@ E@1@?E=? ? @?E@E A AJ J =? 1C= E) A 'J 1?E F= F@ J =E@ F@ = @C= A? ? F@ @? @ I F= F@ E E A G FA =? 1C= E @? ? @? =?E ? =?D F@ J = @C ?= C= ?A1 ?B@ T >= A?; AC A J = N=?E A F=B@ =C >F 1 A 1 F?< DCAD@C A EA Ad 1?E =B@CE A1?A > H1D3

</=4 2''<"2'' 49/ 72(;X ,

''49-. .G !/2 E 1 IE

b @ A?? G= J=4 ,@ DA?? F= D=C A1 F@ C@D@= @E -@A =9GF F C@ = @ A F@A11@? @ A1 1C= E @? >@ ?> A 1'= = J D 1CA J D=C F J @? AC D=D@C 5! <! 4> F@ =J@ 1AC =? A F@C GC ?>, GF@ F@C = D@C A? =< ?> = =J D 1CA J = GC 1] ?> A =?A F@C GC A1 F@ =J @ < ?E =?E F@?? @ ?> A = =G = A?@C A I@ E DA @E A1 ?? F I ?@ =?E @E I =? D@C A? GFA J >F D C F= @ A1F J G= = 11 @?? ?> A1 G F ?? F@ GACE A1 F@ = @ G= A? @?E@E F= = F@ = @ G= ?@? = A @C ?>B@?E ?> AC @]DA ?> A = @ GA E B A = @ F@<?A B?C @ A1 A? C A? A = ?? A D@?= = @ F= F@ = @ A F@ =G = A?@C G= J =E@ > <6 ! 4> F@ =J D ?? F@ J =??@C E@ C I@E I F@ A AD ? A?A1 F@ Z E>@ DA?? F DA ? =DD@=C A F=B@ I@@?? E@ T B@C@E; I F@ DC A?@C =1 @C ?> =A?> J @ ?> >=A G= T J = @ E F= H>@E N1d

" +(4# ' '2P 1/ '4*# 1<44 ')' 2&& +3 4 2& "+(19 ; / '4 7 49 +=4+ ; '" 2" 4 +' :' +&4/(7+(:= &(+<:<*)'4*#)/44 ')' 2&&49/ =4+ ; '"&(2 ; ' 49/ 3 4 2& "+(19 ; / '4 7 49 4/ '442 <=/ 4 = 7 49 '' 49/ AA ! /2 E 1 .EI

2'=4(<14 2'' 2& 49/ 72(:= H+'# "+")(* +3*/ 42 49/ =+ :' :<4 /=$ '' 49/ GH ! /2 E M IN = GM

?@ GFA ??A @? A11 F@ = J D =?E D=C A1 F@ D=C F J @? , 1CA J =?' ? C J @? G= > A1=?A11@? @ ?E@C F@ 88 @A 9: .N?AG C@D@= @Ed 1 I @ =1 @CG=CE >A A11 F =J D 1CA J F D=C A1 F@ D=C F J @? G F ? @? A x =>= ? ?E G= @b = =?A11@? @ GF@ F@C F@ J DC@ A?G= J =E@ I@1AC@ AC =1 @C F@ 88 @A 9: N d

F@ 1A AG ?> = @ =CA @ DA? F@ - @A : - I GF F G= @?= @E F= 1 =? DAC A?? FA E 1AC>@ , =? = J D AC J =1<E C@ @E AC = AG@E A I@ @E I F@ 1AC F@ D CDA @ A1E@?A ?> F@E @ F@C@ ?? J @? A?@E AC FA E 1C= T E @? @?=? A1 F@ = E =J D AC J =C< AC FA E 7 @C B@?E @ AC @]DA @ A = @6 '*6E "! 6: 4 < 6!#*#> ! G F=? A ? @C1@ J = !<AC J DC@ A?? F@C@A? <?AG ?> F@ =J @ A I@ A ? @C1@ @E F D@C A?? FA E I@ > A1 1@ A? F@ 1 C A D =1 @C = ?> F= = @C = ?? =J D G= DCAB E@E I F@ = @ 1AC =J D ?>@B@C D @ @ A1 D=D@C DA?? GF F=? C@ @ D ^,I DA?? F@ D= J @? A1 J A?@ =J A ? ?> A , G= GC @?? G F= =J D E A1 # , = @E F= F@ DC A?@C? @?E ?> A E@1C= E F@ 6 ?> A1 F@ E A? , 7 ? =G1 1C= E @?

MD /) * +# E .HY 9/ 6<(# &2<' :+)/ '/(+ J/(: 14 2& 0 '24)< *4# $ 4 7+=236/14/ :' '49 = 1+=/ 49+4 49/ ' : 14 ; / '4 i(+= 3+ :? &(=4 3/1+<=/ 49/ 7(4 ') 49/ 72(:= =92<*:' 9+J/ 3// '' 19+()/ :' 42 9+J/ 3// '' &(+<:<*/ '4*# :2 '/ ? =/12 ' : '49+4 49/ '=4(< ; / '4 2<9)4 42 9+J/ 3// '' =/4 2<4? 49 (: '49+4 49/ =/ +*4/(+4 2'= 7/(/ '24 7 49 '' 49/ ; /+' ')' 2& 49/ =4+4<4/ ' 79 19 (/&/((/ :' 42 =2 ; / ' :/P "/ ' : / '4 7(4 ')' 2& =2 ; / ' /7' '=4(< ; / '4' +' :' '24 42 49/ ; /(/ +*4/(')' 2& + 72(:' 2(&)<(/ '' + '' 2*:' 2 '/ ? 3<4 '2 2" ' 2'' 7+= /V 7/==/ :' 2 '' + '# 2& 49/=/ 236/14 2 '=' /) ' +)/ ' E ' .GG J2* ' "' GHG' 7+= 1 4/ :' &2(49/ "(=2 '/(' // ' ! ' 9 ** 3//('H V19' 'D. '79 19 492<)9 :/1 : /:' 2 '*# 2 '' 49/ 12 '=4(<14 2 '' 2& 49/ ' 'A ' I' 1 .GM ='E. '12 'P 4+ '= 23=/(J+4 2 '= =4(2 ')*# 12 '& (; +42(# 2& 2(:' 3 ')/(= 2" ' 2' "# L /*:= 1+=/ ' :, /+19 HEH "C8' ' ' ; 49 ' ' ' ' M ' 'H. I ' A ' ' ' .MD

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F@' D=D@C ' J @? A?@E' ?' F@' ?E J @? ' F@C@' =DD@=C ' =' @'
=J D' AC' J DC@ A?' C@ @J I ?>' F@' C @' =J D' GF F' F@' =G' C@T
b C@ ' 1AC' C@ @ D ';' F ' E AB@C ' F@' @' 1AC' GF F' F@ ' G@C@'
E@ ?@E' =?E' DC@D=C@E%' =?E' IC ?>V$' F@ J ' G F ?' F@' >@?@C= ' GACE '
A1' F@' %' [D=D@C' =I @' A' F@' = E' E @ n' F@'Z E>@ ' =C@%'
F@C@1AC@%' ?=? J A ' A1' AD ? A?' F= ' F@' DC A?@C' G= ' DCAD@C '
A?B @E;' =?E' F= ' F@' GACE ' [D=D@C' =I @' A' F@' = E' E @ n'
=C@' A' I@' =DD @E%' = ACE ?>' A' F@' IZ@ ' J = @C%' A' F' D=D@C%'
GF F%' 1CA J ' F@' A ? !1@ ' J =C<' DA?' %' =DD@=C ' A' I@' DC@D=C@E'
Y A' I@' @E%' = ' 1' F@' J =C<' G@C@' >@? ?@%' 1AC' =' C@ @ D H N Jd
' =DD@=C ' = A' F= ' A J @' A1' F@' E>@ ' G@C@' A1' AD ? A?' F= ' F@'
@ A?E' A ? %' GF F' A J ' F@' GACE ' 7 =I @' A' F@' = E' E @ %H
G= ' 11 @? ;' 1AC' ' G= ' =' F=C>@' A1' 1C= E @? ' @C ?>%' , %
D=D@C' G F' =' A ? @C1@ ' J DC@ A?%' C@ @J I ?>' F@' = E' =J D '
@E' ?' D C =? @' A1' F@' = E' = @%' <?AG ?>%' , ;' =?E' F ' ?'
I =? @' &=' =' F=C>@' A1' ' I@ ?>' Z ' D@C' E@?A @E' I ' F@' = E'
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9/' 72(:=
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1 =/%' +' :'
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' b @ A?' G= ' J =E@' ?' F@' 1A AG ?>' = @%' = ' A' =' E ? A?'
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=>@ J @? ' A1' F@' A J J A?@C ' A1' @] @ H F@' DC A?@C ' G@C@'
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G F' ? @? ' A' E@1C= E' F@' 76 ?>' A1' F@' E Q;' =?E' A?@' A1' F@ J '
F=B ?>' I@@?' A?B @E%' =?' A IZ@ A?' G= ' =<@?' I ' Z ' A ? @ ' A?'
F@ @' >CA ?E ' F= ' ! F@' A11@? @' G= ' AC > ?= ' C@= @E' I ' F@'
-8' @A' %' ' .-%' ' .%' I ' GF F' F@' E @ %' 1AC' @ C ?>' A1' GF F'
F@' = J D ' G@C@' DCAB E@E%' G@C@' J DA @E ' Z= ' I ' -.' @A' %'
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=?E' D@?= @ ' =?E' 1AC1@ C@ ' ? CC@E' = ' F@' J @' A1' D= ?>' F= '
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&6 62 & ' 4*' < ' 4&&! !4 " ' 4*' ? ! $G' = ACE ?>' A' GF=' '
G= ' A I @CB@E' I ' F C %' %' ?' - ?' B ' F< ' D> ! ' 4*'0>!" ' ' NAd
F= ' @ ' 9' A1' F@' = @C' = @' = @ ' F= ' 7= ' D= ? % D@?= @ %'
1?@ %' =?E' 1AC1@ C@ ' A1' =? ' ?= C@' AC' < ?E' GF= A@B@C%' = ' G@ '
D= ? ' A1' E@= F' = ' A F@C %' 1AC' =? ' A11@? @' ?' 1AC @' I@1AC@' F@' F' A1'
* = %' .9.%' J =E@' 1AC' @ C ?>' F@' C@B@? @' A1' @] @%' AC' A F@C' E @ '
?E@C' F@' J =?=>@ J @? ' A1' F@' A J J A?@C ' A1' @] @%' , %' F= '
@ 'C @?E' A' =?E' I@' =DD @E' 1AC' =?E' ?' C@ D@ ' A1' F@' @B@C= ' #6#! ' 4*'
? ! ' =?E' = AG=? @ %' IA ? @ %' =?E' EC=G I= < ' A1' E @ ' A1' @] @'
F@C@I ' F=C>@E' =?E' = AG@E%' , H F= ' F@C@1AC@' FA @' D@?= @ '
=?E' D= ? ' A1' E@= F%' I@ ?>' C@ @?= @E' A? ' A' 1=C' = ' F@ ' C@ = @' A'
#> ! ' 4*' ? ! ' =?E' ?A ' A' E @ ' AC' J '> # "' < ' &6 62 &
4*' 4&&! !4 " ' 4*' ? ! ' NGF F' G= ' F@' = @' G F' C@ D@ ' A' F@'
E ' ?' b @ A?d%' F@ ' A E' ?A ' I@' C@B B@E' I ' A? C A?' ;' I '
I@ ?>' A' F >F ' D@?= %' J ' I@' D@ = ' C@ @?= @E' ?A F@C'
AIZ@ A?' G= ' F= ' F@' ?E J @? ' E E' ?A ' D C @' F@' GACE ' A1' F@'
= @' ;' = ' ' = @E' F@' E ' A' I@' F=C>@=I @' *4" ' 4 ' 6 #' !

R B' +* ; /(S' 1+=/' .' /+19' HYG' +=4' ' ' 1' .N' =' .N' "' ENH
" B' G' +=4' ' ' 1' .N' =' .N' "' ENA' " B' G' ' ' AMI

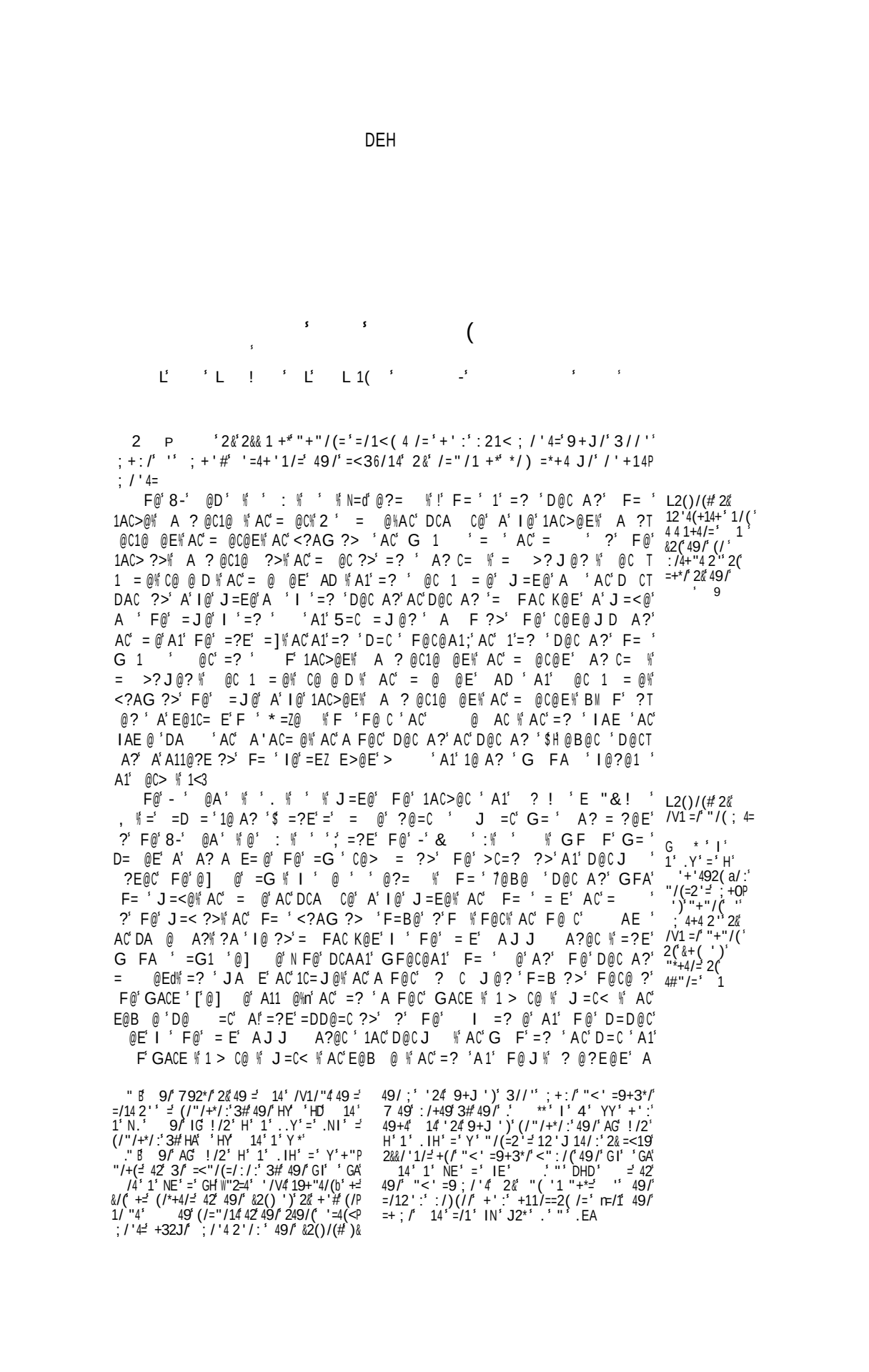
DEG 8 ^ 3 3 3 . J

DC A=@C @E F@ @ =J D F@ A F@ C =C D= @F@=C ?>
F@GACE ! A?@ C A H =?E D= @EA?F@D= <@ A1J@E ?@
F@GA@?E A1F@ =I@G FA F@J EE@D=C =?E A? @= @E
F@E@1 @? A1F= D=C I =G=]@?@= @] @?E ?>AB@C
=J D G@C@ @C@E ?F = @I F@DC A?@C=11]@E A F@
D GF F F@A E DA?F@ @41= F@Z C 1A J E F@DC A?@C
> $ I GA AIZ@ A? G@C@ =<@?? F I@F= 1; 1C F= F@
1AC>@E =J D G= ?A =11 @? ?@=C C@ @J I =? @A1F@>@? ?@
=J D A A? @1AC>@C ; @ A?E F= F@?E J@? G=
E@1 @? 1AC ?A @ ?>A AC E@ C I ?>GF= F '' =J D G= F=
&= 1AC>@E F@AIZ@ A? G@C@C@1@CC@E A F@A? E@C= A?A1
F@G@B@Z E>@ @?A1GFAJ N =GC@? @ =?E = @
I@ ?>=I @? d G@C@A1AD ? A?F= F@AIZ@ A1@G@C@ ?1A ?E@E
V ?E F@A?B A?C >F CA @ ?A E@ B@C ?>F@C AD ? A?
= E$ 7 A F@1C DA ? G= DCAB@E F= F =J D F=E ?
@B@C C@ D@ =?E ?= D=C =D@C1@ C@ @J I =? @A1F@
>@? ?@ =J D @] @D ?>A? F= F@ @? C@D=C ?=>@? ?@
=J D GF F D@ 1@ =?E E@?A@ ZD E G= ?F@ 1AC>@E
= =D A ; =?E =D=D@C G F F@GACE 7 A?@ C A H A? D=
@E AB@C F@B= =? G= =A DCAB@E F= FA @ D=C
GF F C@J= ?@E G@C@ =D@C1@ C@ @J I =? @A1F@ =J @D=C
A?F@>@? ?@ =J D =?E F= F@GFA @G= =1=IC = A?A =C T
1 A? C B@E = A I@ <@ A E@ @B@F@@ @A1@B@C AJ JA?
AI @CB@C ?] @]= C@ @J I =? @AC *6 !&! ?A C@b C@E A
A? @F@ C J@A1 1AC>@C ; 1AC 1F@C@ =11 @? C@ @J T
I =? @A F@G F= =1= @J =< ?>G= ? @?E@E =?E F= F@
1= @ =J D A J =E@= A F=B@ =?=D E@A E@ @B@ F=
11 @? ?F = @F@Z C I F@C B@CE F=B@ 1A ?E F=
F =J D F=E =11 @? <@?@ A > B@ =?=D E@A E@T
@B@GF F = F@ =G C@b C@ A Fp @A?E DA ? F@
?E J@? F=C>@ F@DC A?@C G F F=B ?>1AC>@E =@C = ?&6" =?E G F F=B ?> @C@E =@C = ?D=D@C G F =1AC>@E =?E A ?@CT
1@ @E &6" C@ @?=I ?>=J =C<DCAB E@E =?E @E ?D C =? @A1
F@ ; =?E F@A F@C A ? E@ C I@ A I@ =11]@E A F@ @ =C @ = =D = =
A11@? @ F@ ?E J@? A? = ? = F@GACE F= F@ C@T
b C@ A A? @ F@A11@? @H 1 3

L A1 DA?F@C = A1 =? ?E J@? 1AC =? A11@? @ J@? A?@E ?
=? +44/ ; "4 F F=D @C Z@Z C J= ?E@C F@ :^ , 8 3 @ N d
A?B F@DC A?@C A1=?= @J D A AJ J F@ =J@ =?E F@C@T
DA?F@ J= I@D ? F@E ?F@ =J@ J=??@C= 1F@F=E I@@?
A?B @E DA?=? ?E J@? 1AC F= @J D

W b 2** 1244 1+=/ G /+19 .MIH I +< '4 HMM G.G GGN
" 42* . " Y)

DEH



DEI H *' < ' W4"2 "' ' 4 *' H**! !6 ' N6E " ' $ % &' J

J = @' AC' D= ' 1AC' F@' = J @' ; =?E' @B@C ' D@C A?% @] @D ' = ' I@1AC@' @] @D @E% GFA' F= ' J =<@% AC' = @' AC' DCA C@' A' I @' J =E@% AC' = E' AC' = ' ?' F@' J =< ?>% =? ' D=D@C' ?' F@' I =? @' A1' GF F' F@' GACE ' [' @] @' A11 @%n' AC' =? ' A F@C' GACE % 1 > C@ % J =C< % AC' E@B @ % AC' =? ' A1' F@ J % @ E@ ' A' J = @' =?E' D= ' 1AC' F@' = J @% F= ' I@' B I @' ; =?E' @B@C ' D@C A?% @] @D ' = ' I@1AC@' @] @D @E% G!FA' F= ' <?AG ?> ' F=B@' ?' F % F@ H% AC' F@ C' AE ' AC' DA @ A?% G FA ' =G1 ' @] @' N F@' DCAA1' GF@C@A1' F= ' @' A?' F@' D@C =?' = @Ed% =? ' D=D@C' GF= @B@C' ?' F@' IT =? @' A1' GF F' F@' GACE ' [' @] @' A11 @%n' AC' =? ' A F@C' GACE % 1 > C@ % J =C< % AC' E@B @ % D@ =C' A' =?E' =DD@=C ?>' ?' F@' I =? @' A1' D=D@C' @E' I ' F@' AJ J A?@C ' A1' @] @' 1AC' D@C J % AC' =? ' D=C ' A1' F' GACE % 1 > C@ % J =C< % AC' E@B @ % AC' A1' =? ' A1' F@ J % ? @?E@E' A' J = @' =?E' D= ' 1AC' F@' = J @% F= ' I@' B I @' ; =?E' @B@C ' D@C A?% @] @D ' = ' I@1AC@' @] @D @E%!G FA' F= ' I ' =? ' =C % J @C % AC' A? C B=? @% = @' AC' J A C@% AC' = E' AC' = ' ?' = ?>' AC' DCA C ?>' F@' GACE ' [' @] u' A11 @%n' AC' =? ' A F@C' GACE % 1 > C@ % J =C< % AC' E@B @ ' D@ =C' A' =?E' =DD@=C ?>' ?' < ' IT =? @' A1' F@' D=D@C' @E' I ' F@' AJ J A?@C ' A1' @] @' 1AC' D@C J % AC' =? ' AC' D=C ' A1' F' GACE % 1 > C@ % J =C< % AC' E@B @ % AC' =? ' A1' F@ J % ? @?E@E' A' J = @' =?E' D= ' 1AC' F@' = J @% A' =DD@=C' B I @' ?' F@' I =? @' A1' =? ' D=D@C' GF= @B@C' ; =?E' @B@C ' D@C A?' ?A ' = FAC K@E' AC' =DDA ? @E' = ' = I C@ = E% GFA' F= ' @?>C=B@% = % % AC' J =<@% AC' = @' AC' DCA C@' A' I@' @?>C=B@E! = % % AC' J =E@% AC' = E' AC' = ' ?' @?>C=B ?>% = ?>% ?>% AC' J = ?>' =? ' D = @% D@ ' AC' A F@C' F ?>' ?' J = A?' A1' AC' A' C@ @ J I @' =? ' D = @' AC' D@' J =E@' AC' @E' I ' F@' E C@ A?' A1' F@' AJ J A?@C ' A1' @] @% 1AC' F@' D CDA @' A1' J =C< ?>' AC' DC ? ?>' F@' D=D@C' A' I@' @E' 1AC' D@C J ' ; =?E' @B@C ' D@C A?% @] @D ' = ' I@1AC@' @] @D @E% GFA' F= ' <?AG ?> ' F=B@' ?' F ' AC' F@C' AE ' AC' DA @ A?% G FA ' =G1 ' @] @' NDCAA1' GF@C@A1' F= ' @' A?' F@' D@C A?' = @Ed% =? ' F' D = @' AC' D@% NEd' F= ' 1AC' @B@C ' F' A11@? @' I@' =EZ E>@E' =' 1@ A?% % =?E' F= ' I@' C=? DAC @E' 1AC' F@' @C J ' A1' @B@?' @=C % N@d' AC' F= ' I@' J DC A?@E% = ' F@' E C@ A?' A1' F@4' A C ' I@1AC@' GFA J ' F' D@C A?' F= % I@' C @E% 1AC' =? ' D@C AE' ?A ' @ ' F=?' GA' @=C ' N Md

G' ' ' I' ' ' ' ' ' ' ' ' @ ' : ' 7 B@C ' D@C A?' GFD' F= ' A ? @C1@ ' AC' 1AC>@% AC' = @' AC' DCA C@' A' I@' A ? @C1@ @E' AC' 1AC>@E% AC' = ' ?' A ? @C1@ ?>' AC' 1AC> ?>' =? ' D@C J % AC' =? ' D=C ' A1' =? ' D@C J % AC' F= ' A ? @CT % 8 ' E $ ' , 1@ ' =? ' J DC@ A?% = J D% AC' J =C<% 1 > C@% AC' E@B @' DCAB E@E' AC' =DDA ? @E% AC' A' I@'!DCAB E@E' AC' =DDA ? @E' I ' F@' AJ J A?@C ' A1' @] @' A' I@' D ' A?' F' D@C J % AC' F= ' @C% > B@% AC' J =<@' @' A1' =? ' A ? @C1@ @E' AC' 1AC>@E' D@C J % <?AG ?>' F@' = J @' AC' =? ' D=C ' F@C@A1' A' I@' A ? @C1@ @E' AC' 1AC>@E% AC' F= ' @C% > B@% AC' J =<@

" B / /' 49/' . ' ' .G' /4 ' 1 ' .G. ')' .E' +' :' .E' ' .N /4 ' 1 ' HE' =' . . ' 79 19' /V4/ ' :' 49 = 1*+<=/' 42' 49/' / ') (+J ') ' 1 ' "*+4/=' 1 ' &2(' 49/' "<("2=/' 2& ; +0 ')' 1/ (4 & 1+4/= < ' : / (' 492=/' 14= W1b' 27 ' " / ' +* =/ (J 4< : /' &2(' + ' # 4/ (; ' ' 24' /V1/ / : ') ' =/J/ ' ' + ' :' ' 24' */=' 49+ ' & J/' #/+(=' &' 49/' 2&&/ ' 1/' 7+= 12 ; ; 44/ :' +&4/(' GA' <*# ' .EY I ' J2*' . ' " ' DH

Wwb' 9 = =4+4<4/' 12 ' 4+ ' = ' 2' " (2J = 2 ' = += 42' " (' 1 " +*= ' ' 49/' =/12 ' : ' : /) (/ /' 2(+11/==2(/ = ? 49/' " (' 1 " +* = ' ' 49/' =/12 ' : ' : /) (/ / ' 49/ (/&2(/ ' +(/' "< ' =9+3*/' +112(: P ') ' 42' 49/' 12 ; ; 2 ' ' *+7' ' ' 49/' =+ ; / ; + ' ' / (' += " (' 1 " +* = ' ' 49/' & (=4 : /) (/ / ' +' :' 49/' +11/==2(/ = +(/' "< ' =9+3*/' < ' : / (49/' GI ' GA' /4 ' 1 ' NI ' J2*' . ' " ' .DI '

@ A1 =? D@C J G F =? F A ? @C1@ @E J DC@ A? =J D AC J =C< 1 > C@ AC E@B @ <?AG ?> F@ =J @ A I@ A ? @C1@ @E ; AC 1 =? D@C A? AC D@C A? F= <?AG ?> AC G ?> = @D AC C@ @ B@ =? A ? @C1@ @E AC 1AC>@E D@C J AC =? D@C J G F =? F A ? @C1@ @E J DC@ A? =J D AC J =C< 1 > C@ AC E@B @ F@C@A? <?AG ?> F@ =J@ A I@ A ? @C1@ @E F= 1AC @B@C F A11@? @ I@ =EZ E>@ > A1 = J E@J @=?AC =?E F= I@ C=? 4 DAC @E 1AC F@ @CJ A1 @B@? @=C 7**3 AC 1 ?@E =?E J DC A?@E = F@ E C@ A? A1 F@ A C HNDd

@ 8 ! B A11 @C A14 @] @ GFA F= E@ B@C A 4 /1 .A 11@C A I@ E@ B@C@E A =? D=D@C DC@D= !@E AC DCAB E@E AC =D J/( ) "<4 DA ? @E I F@ AJJ A?@C A1 @] @ A I@ @E 1AC D@CJ D I =?< AC I@1AC@ F D@CJ F= I@ 1 @E D =?E @E =>C@@=I @ A =?E ? A?1ACJ G F = C@b @ ?A @ ; =?E @B@C A11 @C GFA F= <?AG ?> > B@ AC >C=? =? D@CJ A =? D@C A? ?A @? @E A C@ @ B@ F@ =J@ AC F= <?AG ?> > B@ AC >C=? =? 1= @ AC ? C @ @? C ? F@ A ? @CD=C A1 =? D@CJ 11 B@? AC >C=? @E I F J AC F= <?AG4 ?> AC G ?> C@ @ B@ AC =<@ =? >AAE AC AJJAE @ ? A F@ A < A1 =? D@C A? AC D@C A? ICA >F ? G F =? 1= @ AC ? C @ AC 1C= E @? D@CJ AC F= <?AG ?> AC G ?> >C=? =? D@CJ 1AC F@ C@JAB= A1 =? >AAE AC AJJAE @ A A1 AC 1CAJ F@ A < A1 =? D@C A? AC D@C A? GFA F= F=B@ C@ @ B@E AC C@ = ?@E F >AAE AC AJJAE @ AC =? A1 F@J ?E@C A1 I B C @ AC DC@ @] A1 =? 1= @ ? C @ 1AC>@E AC 1C= E @? D@CJ AC F= <?AG ?> AC G ?> > B@ =? 1= @ C@E ? A GF F F A < Z =?E C @? @E A = A @?=I @ F D@C A? AC D@H A? 1= @ =?E 1C= E @? A AI = ? = D@CJ AC D@CJ ; AC 1 =? F A11 @C <F= <?AG ?> AC GE ?> 11@C F@ =J@ A I@ EA?@ E C@ AC ?E C@ ; @B@C A11 @C A A11@?E ?> ? =? A1 F@ = @ =1AC@ = E F= I@ > A1 = J E@J @=?AC =?E A? A?4 B A? F= 11@C F D ?Z>FJ @? I 1 ?@ =?E J DC A? J @? AC 1 ?@ AC J DC A? J @? = F@ A C F= =G=CE ; =?E @B@C A11 @C A A?B @E F= 1CA D F@? @1AC F I@ ? =D=I @ A1 FA E ?> =? A11 @ AC D = @ ? AC C@ = ?> A =? A1 F@ C@B@? @ A1 F@ 1 ? @E 6 ?>EAJ H

F@ : @A .8 @?= 7 F= 1 =? D@C A? AC D@C A? L2()) 1 F= <?AG ?> =?E G 1 1AC>@ AC A ? @C1@ AC = @ AC DCAT 49/ + ; /2(C@ A F@ 1AC>@E AC A ? @C1@ @E AC <?AG ?> =?E G 1 = 9+ : 7(4) 2& AC = ? 1AC> ?> AC A ? @C1@ ?> F@ ?= J @ AC F=?EGC ?> A1 49/ 3 F@ " ! " 2 "6 4* < ? ! 1AC F@ J @ I@ ?> AC A1 F@ 0 AJD CA @C A1 F@ = F A1 F@ @] @ AC F@ D@C A? AC D@C A? E = FAC K@E = =1AC@ = E A =? EC=1 ? C J @? AC GC ?> GF= T 1 DA = E A@B@C 1AC AC ?ACE@C A F@ C@ @ B ?> AC AI = ? ?> =? A1 F@ JA?@ ? ?F@ F=?E AC AE A1 F@ >AB@C?AC =?E AJD=? A1 F@ =?< A1 ?> =?E A? = A ? A1 F@ C@ @ B@C >@?@C= A1 F@ @] AC F= 1AC>@ AC A ? @C1@ AC = @ AC DCA C@ A I@ 1AC>@E AC A ? @C1@ @E AC <?AG ?> =?E G 1 = AC = ?> =? EC=1 ? C J @? AC GC ?> ?1AC J A1 !=

" 27 "/ '+ =/(J 4< : /& 2(+' # 4/(; ' " 4/ . ' ' .G ' /4 1 ' . G ' = ' . E ' 24 /V1// : ') =/J/ ' +' : ' 24 */= 4* + ' 4 ' 1 ' HE ' = ' . . ' 79 19 & J /+(= & 49/ 2&&/ '1/ 7+ 12 ; ; 44/ : +&4/(GA <*# ' .EY I ? =// J2* ' . ' " ' DH /V4/ ' : 49 1*+<=/ 42 &2()) ' , ' 1/(4 P & 1+4/= < ' : /(492=/ 14=

H

D-Y H*' 'W4"2 "'' 4*'H**! !6 ' W6E " ' $% &'

EC=1 % J=E@' F ' F' C@ @ B@C >@?@C= % AC' F@' D@C A?' AC' D@C A? ' = FAC K@E' = ' =1AC@ = E% AC' F= ' @C' AC' D I F' =? ' F%<?AG ?>' F@' =J @' A' I@' 1AC>@E' AC' A ? @C1@ @E%'G F' =?' ? @? A?' A'E@'!= E' =? ' D@C A?' GFAJ A@B@C;Ĥ @B@ ' D@C A?' A' A11@?E ?>' F= ' I@' > ' A1' 1@ A? %' G FA ' I@?@1 ' A1' @C> % 1<3

L2() ')' '+ ; /' 2& 12 ; ; =P = 2 ' /(2& 1<=P 42 ; =X

' :' ,' 8 3 @ ' ' %' N ?' ' A' = J @?E' $ W =G' C@ = ?>' A' F@' AJ ' =?E' ? =?E' (@B@? @d%' ' 9 %!' 1' =? ' D@C A?' AC' D@C A? ' F= ' 6?AG ?> ' =?E' G 1 ' 1AC>@' AC' A ? @C1@ %' AC' = @' AC' DCAT C@' A' I@' 1AC>@E' AC' A ? @C1@ @E%' AC' <?AG ?> ' =?E' G 1 ' = ' AC' = ' ?' 1AC> ?>' AC' A ? @C1@ ?>' F ' '?= J @' AC' F 1 EGC ?>' A1' =? ' AJ J A?@C' A1' EI %' AC' A1' =? ' = A ? =? ' =?E' AJD CA @C ' >@?@C= ' A1' F@' AJ %' AC' A1' =? ' D@C A?' = ?>' 1AC' F@ J ' C@ D@ B@ %' A' =? ' EC=1 %' ? C J @? %' AC' GC ?>' GF= A@B@C%H1AC' AC' ?' ACE@C' A' F@' C@ @ B ?>' AC' A I = ? ?>' =? ' A1' F@' J A?@ ' ?' F@' F=?E ' AC' T AE ' A1' F@' >AB@C?AC' =?E' AJD=? ' A1' F@' =?<' A1' ?> =?E%' A?' = A ? ' A1' F@' = E' AJ J A?@C ' A1' @ AJ %' AC' F= ' 1AC>@' AC' A ? @C1@ %' AC' = @' AC' DCA C@' A' I@' 1AC>@E' AC' A ? @C1@ @E%' AC' <?AG ?> ' =?E' G 1 ' = ' AC' = ' ?' F@' 1AC> ?>' AC' A ? @C1@ ?>' = ' EC=1 %' ? C J @? %' AC' GC ?>' ?' 1AC J ' A1' =' EC=1 %' J=E@' I ' F' = @E D =? ' =?E' AJD CA @C >@?@C=' AC' D@C A?' = ' =1AC@ = E%' AC' F= ' @C' AC' D I F' F@' =J @' <?AG ?>' ' A' I@' 1AC>@E' AC' A ? @C1@ @E%' G F' =?' ? @? A?' A' E@1C= E' =? ' D@C A?' GFAJ A@B@C%' @B@C ' F' D@C A?' AC' D@C A? ' A' A11@?E ?>%' I@ ?>' F@C@A1' A?B @E%' F= ' I@' E@ =C@E' =?E' =EZ E>@E' A' I@' > ' A1' 1@ A? !H

' @ ' %' = F' A1' F@' @B@C=' @ A? ' N d' A1' F ' ' @ ' 1AC F' ?' A J ?' "A%' ' A1' F@' =I @' A' F ' ' ' = ' I@' E@@ J @E' =?E' =<@?' A' I@' ? ACDAC= @E' ?' =?E' 1AC J ' D=C ' E1' 7 F@' AJ ' A?T A E= A?' %' 98 %H ?' F@' ACE@C' =?E' D = @' = >?@E' A' @= F' F' @ A?' ?' =?E' I ' A J ?' "A ' -' A1' F@' R= E' =I @%' =?E' F@' = E' @B@C=' @ A? ' A1' F ' ' ' F= ' %I@' C@=E' =?E' H A? C @E' G F' < ' = E' 7 AJ ' A? A E= A?' %' 98 %H =?E' F@' DCAB A? ' A1' F@' = @C' ' F= ' I@' E@@ J @E' A' C@ = @' A' =?E' I@' =DD =I @' A' F@' = E' @B@C=' @ A? ' A1' F ' ' %' ?' F@' =J @' J =??@C' =?E' @' F@' =J @' @] @? ' = ' 1' F@' = E' @B@ J ' @ A? ' A1' F ' ' F=E' I@@?' AC > ?= ' @?= @E' F@C@ ?%' ?' F@' ACE@C' =?E' D = @' A' = >?@E' A' @= F' F' @ A?' ?' =?E' I ' F@' = E' =I @

<' =9 ; /' 4 2& D@C A?' C< *4## 2& &2() ')' C +*4/(')' 1/(4 [' 1+4/=' AC' (/P 1/ "4=') J/ '' <' : /(49/' (2"/(4# +V 14

' F@' ' Y,' ' 3 @ ' ' 8' N5CAD@C ' =]' d%R' 9 % 7 1' =? ' D@C A?' F= ' 1AC>@%' A ? @C1@ %' AC' = @C%' AC' = @' AC' DCA C@' A' I@' 1AC>@E%' AA @C1@ @E%' AC' = @C@E%' AC' <?AG ?> ' AC' G 1 '= ' AC' = ' ?' 1AC> ?>%' A ? @C1@ ?>%' AC' = @C ?>%' =? ' @@ ! 1 = @' A1' F@' AJ J A?@C ' A1' = J D ' =?E' =]@ %' AC' A1' =? ' A F@C' AJ J A?@C ' = ?>' ?' F@' @] @ A?' A1' F ' %' AC' =? ' @C 1 = @' AC' C@ @ D ' GF F' F@' D F @C' A1' F@' =?<' A1' ?> =?E%' AC' F@' C@ @ B@C >@?@C=' A1' = J D ' =?E' =]@ %' AC' =? ' A11 @C' 1AC' C@ @ D %' ' I ' F ' ' = FAC K@E' A' > B@' A?' F@' C@ @ D ' A1' =? ' J A?@ ' D= =I @' ?E@C' F ' %' AC' qF= ' @C' =? ' F' 1AC @E%! A ? @C1@ @E%' AC' = @C@E' @CT 1 = @' AC' C@ @ D ' =R' =1AC@ = E%' G F' ? @? ' A' E@1C= E' F@C' * =Z@ % YAC' =? ' I AE ' DA ' AC' A !DAC= @%' AC' =? ' D@C A?' GFAJ A@B@C%' @B@C

":B 9/' '=4< ; /' 4=' 42/' 4 2' :' '' 49 =' =/14 2 '' =// ;' 42' 3/' 7+((+' 4=' &2(' 49/' "+#' K ; /' 4 2& ; 2 '/# 7 49 '' 49/' ; /+' ')' 2& 49/' !)' ' GA' /4' /' ME' =' ' GH' 3 ' 9' EGM' +' :' 49/' &2()/(# 2& 49/ ; :=' '27' "<' =9+3*/' <' : /(49+4' =/14 2 '' =' 42' "('1 "+*=' '' 49/' =/12 ' :' :/)(//-' +' :' +1

,2/==2(/=' =//' 49/' =+ ; /' 14' =//' IN' J2*' .' "' .EA' //' 49/' D 'E ! /2' I ' 1' AH' =' AY' . ' DED W4& 9/' +32J/' =/14 2 '' E' =' 2 '/' 2& 49/ ; ' 3/ ')' '' * /<' 2& =/14 2 '' GE' '' .Y ' .D /4' 1' .MD' 9/' <=42 ; =' 2' =2* :+4/ :' 14' .EAH

D@C A?' A' A11@?E ?>% =?E' I@ ?>' F@C@A1' =G1 ' A?B @E% F= ' I@' =EZ E>@E' > ' A1' 1@ A? % =?E' F= ' I@' C=? DAC @E' 1AC' =' @C J ' ?A ' @] @@E ?>' 1A C @@?' @=C H1C3

?@' .' ,' 9' @A' :% ' 8 % ' 8 % @?= % 7 F=' 1' =? ' D@C A?' F=' 1AC>@' AC' A ? @C1@ % AC' F=' = @' AC' DCA C@' A' I@' 1AC>@E' AC' A ? @C1@ @E% AZ4 '= ' <?AG ?> '=?E' G 1 '= E' AC' = ' ?' 1AC> ?>' AC' A ? @C1@ ?>% F@' ?= J @' AC' F=?EGC ?>' A1' =? ' C@ @ B@C ' >@?@C=' A1' @] @% AC' A1' =? ' @] @' AJD CA @C' A1' F@' = F' = ' =1AC@T = E% AC' A1' =? ' A1' F@' D@C A? ' E ' = FAC K@E' = ' =1AC@ = E% A' =? ' EC=1 % ? ? J @?1' AC' GC ?>4' GF= A@B@C% 1AC' AC' ?' ACE@C' A' F@' C@ @ B ?>' AC' AI = ? ?>' =? ' A1' F@' JA?@ 4' I % ?A @ % EC=1 % F@b @ % AC' ACE@C % 1AC' F@' D= J @? ' A1' JA?@ % ?' F@' F=?E ' AC' AE ' A1' F@' >AB@C?AC' =?E' AJD=? ' A1' F@' =?<' A1' ?> =?E% A?' = A ?' A1' F' C@ @ B@C >@?@C=' = ' =1AC@ = E;' AC' 1' =? ' D@C A?' F=' 1AC>@' AC' A ? @C1@ % AC' F=' = @' AC' DCA C@' A' I@' 1AC>@E' AC' A ? @C1@ @E% AC' F=' <?AG ?> '=?E' G 1 '= E' AC' = ' ?' F@' 1AC> ?>' AC' A ? @C1@ ?>% A1' =? ' EC=1 % ? C J @? % AC' GC ?>' ?' F@' 1AC J' A1' =' EC=1 % ?=C J @? % AC' GC ?>' J =E@' I ' =? ' C@T @ B@C >@?@C=' A1' @] @% AC' I ' =? ' @] @' AJD CA @C' A1' F@' = F' = ' =1AC@ = E% AC' I ' =? ' D@C A?' AC' D@ A? ' = FAC K@E' = ' =1AC@ = E% AC' F=' @C' DC' D I F' =? ' EC=1 % ? C J @? % AC!' GC ?>' A' 1AC>@E' A1' A ? @C1@ @E% <?AG ?>' F@' =J @' A' I@' 1AC>@E' AC' A ?T @C1@ @E% G F' =?' ? @? A?' A' E@1C= E' F ' * =Z@ ' AC' =? ' D@C A?' GFA J A@B@C;' @B@C ' D@C A?' A' A11@?E ?>% =?E' I@ ?>' F@C@A1' =GT 1 ' A?B @E% F= ' I@' =?E' ' F@C@I ' E@ =C@E' =?E' =EZ E>@E' A' I@' > ' A1' 1@ A? % =?E' F= ' 11@C' E@= F' = ' ?' = @ ' A1' 1@ A? % G FA ' I@?@F ' A1' @C> H1 1 3

' F@' -:' ,' -8! 3 @ ' ' 9% ' 9% 7 GFA A@B@C' F= ' 1AC>@' 2(' = @C% AC' F= ' A11@C% @C% E DA @' A1% AC' D ' A11% <?AG ?>' F@' =J @' A' I@' 1AC>@E' AC' = @C@E%!=?' @] F@b @C' I ' AC' @] F@b @C' IA?E% AC' @] F@b @C' E@I@? C@% AC' =? ' ?EAC @J @?' A?' AC' = >? J @?' A1' =? ' @] F@b @C' I ' AC' @] F@b @C' IA?E' AC' @] F@b @C' E@I@? C@% AC' =? ' C@ @ D ' AC' @C 1 = @ 1AC' ? @C@ ' = C ?>' F@C@A?% G ? @?' A' E@1C= E% F= ' I@' > ' A1' 1@ A? % =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@ =I @% = ' F@' E C@ A?' A1' F@' A C % A' I@' <@D ' ?' D@?=' @CB E@' 1AC' 1@' AC' 1AC' =? ' @C J ' ?A ' @ ' F=?' FC@@' 1 3' @=C % ` AC' A' I@' JDC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' @=C % G F' AC' G FA ' F=CE' =IA C% =?E' G F' AC' G FA ' A =C ' A?1 ?@T J @? H NJd

W##D / '+* =/(J 4 +: /' &2(+'# 4/(;' '24' /V1// : ')' &2<(4// '* +' :' '24 */=2 49+ '* & J/' #/+(2 &' 49/' 2&&/ '1/' 7+2 12 ; ; 44/ :' +&4/ ('GA' ;*#' .EY I ' J2*' .' "' DH'

":B (' 2 '=: +*/' W ' (' ' NMD' 23P =/(J/2 49+4' 49 2 =/14 2 '* +""/+(=' 42' 3/' =<"/(=/ : /:' 3# 49/' .' **' I ' 2' YY' =' 'K (/ / '+14/ :' 3# 49/' GI' 'GA' /&1' 2' NE?' E ' GHd' =2' &+(' +2 (/*+4/2 42' 49/' &2( ) ')' 2&' +' # : (+&4' '=4(< ; / '4' 2(7 (4 ')' &2(2('' 2(: /(' 42' 49/' (/1/ J ')' 2(234+ ' ')' +' # 2&' 49/' 3 **=' '24/=' : (+&4=' 19/T</=' 2(2(: /(2 &2(49/' "+# ; / '4' 2& ; 2 ' /# '' 49/' 9+' :2 2(1<=42 : # 2& 49/')2J/('2(+' :' 12 ; "+' # 2&' 49/' +' 'O' 2& ')*+' :' 2 '' +1P 12<'4' 2&' 49/' (/1/ J/( ) / ' / (+* 2& /V1 =/ ' 49' (/=" /14' 42' 49/' 249/('=4(< ; / '4=2 +32J/' ; / '4 2 ' / : ' J a ' 492=/' &2(2('' 2(: /(' 42' 49/' (/1/ J ')' 2(234+ ' ')' +' # 2&' 49/' ; 2 ' /# '' 49/' +' 'O' 2& ')*+' :' 2'

%68 ' % ' $6 E' 3 3 73 Y9383 0' E3=' 223 ' %' <3' > 8 $' % ' E3' 2 =? 38 ' % ' ? %83=' > E 8' E3' ' N ' 0' ' 0' $' 0' > E E' $' 3Y38 3 :' <=' E3' ' Q' ' ' 3 0' -' 0' $' 0' 8 :' E3' % 93 =0' Q 0' E3 3% ' > ' <3' 268 $E < 3!' % : 89 = ' * $' %' 2 8 2 $Y' 8 :' 3$$% 3$-' $33' & ' 7% ' 0' 2 ' `

1 3' @@' 6 ' D' .89

_ % ' 3$$' E 8' 73' =3 $Y' ' E3' % 38 3' +2 %? ? 3 :' 3 ' E3' ' % ' M6 =0' ' -' $33' 7% ' 0' 2 '

?!' E $' 6$3' $' B38' % ?' 2 ' % ' E3' ' N ' 0' ' 0' $' 0' 8 :' ' Q' ' ' 3 ' ' 0' $' ' E3 3' Y> $' Y $? ' 6$3' 8' E3' ' (3% ' 0' ' 0' $' ' "!0' $' %' E3' % 93 =' % ' 3H E3C63 ' < $' 8' " 3 8 : ' 33' $%' E3' ' Q' ' ' 3 ' ' 0' $' *$' %' E :' <%6 0' Q 0' $33' ' 2Y ' -' 7% ' 0' 2 ' Y

L2() ')' /VP 19/T</(' 3 **=' 32' :=' +' :' : /P 3/ '4<(/= , ' 7 3

+0 ')' "*+4/=' ' "' ; 4+P 4 2 '' 2& 492=/' (p/ :' &2(' /V ' 2* /T</('9 =' ,

@ ' ' 7 & FA A@B@C% G FA ' =G1 ' = FAC ' AC' @] @' N F@' DCAA1' GF@C@A1' F= ' @' ?' F@' D=C ' = @Ed% F= ' J =<@% AC' = @' AC' DCA C@' A' I@' ' J =E@% AC' F= ' = E' AC' = ' ?' J =< ?>% AC ' F= ' <?AG ?> ' F=B@' ?' F ' AE ' AC' DA @ A?' =? '*"6 & '&4> # '4"' ? C J @? ' F=B ?>' F@C@ ?' =? ' G!ACE % @ @C % 1 > C@ % J =C< % ?@ % AC' E@B @ ' D@ =C' A' =?E' =DD@=C ?>' ?' Z@' I =? @' A1' =? ' D=D@C' D HAB E@E' AC' A' F@' DCAB E@E' AC' @E' 1AC' @] F@b @C' I ' AC' @] F@b @C' IA?E ' AC' ? < > "' # : >4(' AC' =? ' J = F ?@C ' 1AC' GAC< ?>' =? ' FC@=E ' ? A' F@' I =? @' A1' =? ' D=D@C% AC' =? ' F' FC@=E% =?E' ? @?E@E' A' J = @' F4'GACE % @ @ % 1 > C@ % J =C< % ?@ % FC@=E % AC' E@B @ % AC' =? ' D = @' D@ =C ' @J D A @E' 1AC' DC ? ?>' F' @] F@b @C' F % IA?E % 4"' # : >" ' AC' =? ' E @' 4"' 6 ' D@ =C ' @E' 1AC' DC@D=C ?>' =? ' F' Dy= @% AC' 1AC' @= ?>' F' @] F@b @C' I % IA?E % 4"' # : >" ' AC' =? ' D = @% E @% 4"' 6 ' ? @?E@E' A' J = @' =? ' F' D = @% E @% 4"' 6 ' = ' =1AC@ = E% F= ' I @' > ' A1' 1@ A? % =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @% = ' F@' E C@ A?' 4*' F@' A C % A' I@' <@D ' ?' D@?= ' @CB E@' 1AC' =? ' @C J ' ?A ' @] @@E ?>' @B@?' @=CZZ' =?E' ?A ' ' F=?' FC@@' 1 3' @=C % ` AC' A' I@' J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' @=C % G F' AC' G FA ' F=CE' =IA C% =?E' G F' AC' G FA ' A =C ' A?1 ?@T J @? H143

* =< ?>' D=D@C' '' ; 4 44 2 '' 2& 49+4' <=/ :' &2I' /V19/T</(' 3 **=' 1

@@' ' 7 & FA A@B@C% G FA ' =G1 ' = FAC ' AC' @] @' N F@' DCAA1' GF@C@A1' F= ' @' A?' F@' D=C ' = @Ed% F= ' J =<@% AC' = @' A ' DCA C@' A' I@' J =E@% AC' = E' AC' = ' D' J =< ?>% =? ' D=D@C' ?' F@' I =? @' A1' GF F' F= ' =DD@=C' =? ' GACE % @ @C % 1 > C@ % J =C< % ?@ % FC@=E % AC' A F@C' E@B @ ' D@ =C' A' =?E' =DD@=C ?>' ?' F@' I =? @' A1' =? ' D=D@C' DCAB E@E' AC' A' I@' DCAB E@E' AC' @E' 1AC' F' @] F@b @C' I % IA?E % 4"' # : >" ' AC' =? ' D=C ' A1' F' GACE % @ @C %% 1 > C@ % J =C< % ?@ % FC@=E % AC' A F@C' E@B @ % =?E' ? @?E@E' A' J = @' F@' =J @% AC' F= ' <?AG ?> ' F=B@' ?' F ' AE ' AC' DA @ A?' =? ' D=D@C' GF= A@B@C% ?' F@' I =? @' GF@C@A1' F= ' =DD@=C' =? ' F' GACE % @ @C % 1 > C@ % J =C< % ?@ % FC@=E % AC' E@B @ ' = ' =1AC@ = E% AC' =? ' D=C ' A1' F' GACE % @ @C % 1 > C@ % J =C< % ?@ % FC@=E % AC' A F@C' E@B @ % =?E' ? @?E@E' A' ?b = @' F@' =J @% AC' F= ' = @' AC' = % ?' = ?>' =? ' F' GACE % @ @C % 1 > C@ % J =C< % ?@ % FC@=E % AC' E@B @ ' = ' =1AC@T = E% AC' =? ' D=C ' A1' F' GACE % @ @C % 1 > C@ % J =C< % ?@ % FC@=E % AC' A F@C' E@B @ % =?E' ? @?E@E' A' J = @' F@' =J @% A' =DD@=C' ?' F@' I =? @' A1' =? ' D=D@C' GF= @B@C% AC' F= ' =<@' AC' = ' ?' =< ?>' =? ' J DC@ A?' A1' =? ' F' D = @% E @% 4"' 6 ' = ' ?' F@' = ' DC@ @E ?>' @ A?' J @? A?@E% F= ' I@' > ' A1' 1@ A? % =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @% = ' F@' E C@ A?' A1' F@' A C % A' F@' <@D ' ?' D@?= ' @CB E@' 1AC' =? ' @C J ' ?A ' @] @@E ?>' @B@?' @=C ' =?E' ?A ' @ ' F=?' FC@@' 7 3' @=C % ` AC' A' I@' J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' @=C % G F' AC' G FA ' F=CE' =IA C% =?E' G F' AC' G FA ' A =C ' A?1 ?@J @? H7E3

7 3' 2 4' */=' 49+'' & J/' #/+(=' &' 49/' 2&&/ ' 1/' +=' 12 ; ; 44/ :' +&4/(' 49/' GA49' 2&' <*#' .EYI' ? =//' J2*' . ' "' D W2b' 9 =' 1*+<=/' =' &(+ ; / :' 2 '' 49/' A' ' W' /4 ' 1' YY ' =' N ' +' :' .Y' ' .D' 14' 1' .HG ' =' .M ' 79 19' /V4/ ' : / :' 42' (/*+' : ' //' +*=2' 49/' GI' 'GA' /4 ' 1 ' A ' =' .E 9/' 72(:=' 0&(+ ; / $ 0 ; 2<*: $ 0/VP 19/T</(' :/3/ '4<(/='$+' :' 0=/+*'$+(/' '/7 =' 42' 9+(:' *+32<(' 1 ' =//' 6

" ' DHE' ? J2*' . ' " ' EM !E 3' 9 =' 1*+<=/' =' &(+ ; / :' 2 '' 49/' A' 'Y' /4 ' 1 ' YY '=' N ' +' :' .Y' ' .D' /4 ' 1 ' .HG ' =' .M ' 79 19' /V4/ ' : / :' 42' (/*+' : ' //' +*=2' 49/' GI' 'GA' /4 ' 1 ' A ' =' .E 9/' 72(:=' 0:/3/ '4<(/='$ +' :' 0=/+*'$ +(/' '/7 =' 42' 9+(:' *+32<(' 1 ' =//' 6 ' " ' DHE' ? J2*' . ' " ' EM

@ 7 & FA A@B@C G FA =G1 = FAC AC @] @ N F@ DCAA1 GF@C@A1 F= @ A? F@ D=C = @Ed F= D C F= @ AC C@ @ B@ AC <?AG ?> F=B@ ?F AE AC DA @ A? =? D=D@C J =? 1= C@E =?E DCAB E@E I AC ?E@C F@ E C@ A? A1 F@ A J T J A?@C A1 ? =?E C@B@? @ (A J J A?@C A1 F@C * =Z@ H C@= C 1AC F ' D CDA @ A1 I@ ?> @E = @] F@b @C I C @] F@b @C IA?E AC ? < > "# : >" I@1AC@ F D=D@C F= F=B@ I@@?E = J D@E >?@E =?E @E 1AC D I @ AC =? F D = @ E @ 6 = ? F@ = GA DC@ @E ?> @ A? J @?T A?@E F= I@ > A1 =' J E@J @=?AC =?E I@ ?> A?B @E F@C@A1 <6 I@ =I @ = F@ E C@ A?' A1 C@ A C A I@ J DC T A?@E 1AC =? @C D ?A @] @@E ?> FC@@ @=C G F AC G FA F=CE =IA C 1 3

F@ = @ = FAC K ?> @ A1 @] F@b @C I 1C@b @? A? = ?' = @ C@ = ?> A F@ 1AC> ?> , A1 F@ @C 1 = @ AC C@ @ D F@C@ ?' J @? A?@E F@ = @ = A A = A?= D= @E ?' ACE@C A >C=? =?? @ 1AC F@ #! <6"2 A1 @C = ?' ? < > "' :! =E@ F@ 1AC> ?> A1 qF@ @C 1 = @ , F@C@ ?' J @? A?@E A11@? @

F@ 1AC> ?> F@ ?= J @ AC F=?EGC ?> A1 F@ " ! " 2 "6 4* < E4 4**! AC D@C A? @ J D A @E I F J A =? EC=1 ? C T J @? , F= I@@?' J =E@ F@ IZ@ A1 @ D@ = @> = B@ @?= T J @? Y

F@ 3 @ 9 7 F= @B@C D@C A?' GFA' F= <?AG ?> =?E' G 1 1AC>@' AC A ? @C1@ AC = @' AC' DCA C@' A' I@' 1AC>@E' A ? @C1@ @E F@' ?= J @' AC' F=?EGC ?>' A1' F@' C@ @ B@E >@?@C= 1AC' F@' J @' I@ ?>' A1' F@' >@?@C= DA A11 @' ?' ?> =?E' AC' C@ =?E AC' A1' =? D@C A?' @ J D A @E' I AC' ?E@C' F J A' =? EC=1 ? C J @? AC' GC ZD>' GF= A@B@C 1AC' AC' ?' ACE@C' A' F@' C@ @ B ?>' AC' AI = ? ?>' A1' =? J A?@ ?' F@' F=?E AC' AE A1' F@'>AB@C?AC' =?E' AJD=? A1' F@' =?<' A1' ?> =?E' AC' C@ =?E A?' = A ? A1' F@' C@ @ B@C >@?@C= A1' F@' DA A11 @ AC' F= 1AC>@' AC' = @C AC' F= A11@C @C E DA @' A1 AC' D 1' A11 <?AG ?>' F@' =J @' A' I@' 1AC>@E' AC' = @C@E =? EC=1 G=CC=? AC' ACE@C' A1' F' C@ @ B@C >@?@C= AC' A1' =? D@C A?' @?=D A @E' I (?E@C' F J 1AC' J A?@ AC' 1AC' D= T J @? A1' J A?@ G F' ? @? A' E@1C= E' =? D@C A?' GFA J A@B@C F= I@' > A1' 1@ A? =?E' I@ ?>' A?B @E' F@C@A1' F= I@' C=? DAC @E' I@ A?E' F@' @= 1AC' 1@ 1"3

F@ 9' , :' 3 @ 7 ?' 1AC' F@' (@> = A?' A1' F@' # @ A1' 5A =>@ I @ - -' @?= 7 F= 1' =? D@C A C F= 1AC>@' AC A ? @C1@ AC' = @' AC' DCA C@' A' I@' 1AC>@E' AC' A ? @C1@ @E ?Z E @ D = @ AC' A F@C ? C J @? AC' =? D=C A1' =? E @ D = @ AC' A F@C ? C J @? GF F' F= F' I@@? AC' F= AC' J = I@' DCAB E@E J=E@ AC' @E' I AC' ?E@C' F@' E C@ A?' A1' F@' AJ J A?@C A1' =JD =?E' =]@ AC' I AC' ?E@C' F@' E C@ A?' A1' =? A F@C' D@C A?' AC' D@C A? @> = =FAC K@E' ?' F= I@F= 1 1AC' F@' D CDA @' A1' @]T DC@ ?>' AC' E@?A ?>' =? A1' F@' C= @ AC' E @ GF F' =C@' AC' F= I@' E C@ @E' A' I@' F=C>@E' ?E@C' AC' I B C @' A1' F@' = FAC A?

+J ')' '' "2==/== 2 '' "+"/("*+4/=- 2(: /= 42 3/[7=/ :' &2(/VP 19/T</(3 **= 1

L2() ')' 1:(! 6 +' : ! E (/*+4P ') 42 ? 0 < > "' : !

.' /4' 1' HY' =' HH L' ())' 49/' 9+' : 7 (4 ')' 2 49/' (/P 1/ J/( )/ '/(+ 2 49/' "2=4 2 1/ '' ')P *+' :' 2((/P *+' : ' &/*2 #

H I /4 1' NY' = - G' L2() ')' 2(&(+<: <*/ '4*# <= ')' "*+4/= 2(: /= <=/ :' &2(; +(0 ')' "2=4+)/

7 3 9 = 1*+<=/ = &(+ ; / :' 2 " 49/' A ' Y /4 ' 1 ' YY ' =' . M ' + ' :' 49/' .Y ' .D /4 ' 1' .HG ' =' . . ' 79 19 /V4/ ' : / :' 42 (/*+ ' : ' /' +*=2 GI ' GA /4 ' 1 ' Y ' =' .N 9/' 72(: = 0 /V19/T</(: /3/ ' 4<(/ = S+ ' :' [=/+*= $ +(/ ' ' / 7

= 42 9+(: ' *+32<(' 1 ' =/ /' 6 " ' DHE ? J2*' . ' " ' EM W(27 " / ' +* =/ (J 4<: /' &2(* &/' 2(&2(+ ' # 4/ (; ' '24 */=- 49+ '' & J/' #/+(= &' 49/' 2&&/ ' 1/' 7+= 12 ; ; 44/ :' +&4/(GA <*#X .EY I ' =/ /' J2*' . ' " ' DH

DNM 8 ' ' ^ 3 5' '8 ' .' $% &' J

= ?@E' ?' F@' = E' C@ @E' ' A1' F@' = ' @ A?' A1' 5=C = J @? %' N d
AC' ?E@C' AC' I ' B C @' A1' F ' ';' AC' 1' =? ' D@C A?' F= ' 1AC>@'
A ? @C1@ %' AC' J = @%' AC' = @' AC' DCA C@' A' I@' 1AC>@E%' A ? @CT
1@ @E%' AC' J = @E%' F@' = J D%' J =C<%' AC' J DC@ A?%' AC' =? ' D=C ' A1'
F@' = J D%' J =C<%' AC' J DC@ A?%' A1' =? ' F' E @%' D = @%' AC' A @C'
? C J @? %' GF F' F= F' I@@?' AC' F= ' AC' J = ' I^ ' A4DCAB E@E%' J=E@%'
AC' @E' = ' =1AC@ = E%' DA?' =? ' D=D@C%' AC' A F@C' I =? @' AC' J= @T
C = ' GF= @B@C;' AC' 1' =? ' D@C A?' F= ' <?AG ?> ' =?E' G FA '
=G1 ' @] @' N F@' DCAA1' GF@C@A1' F= ' @' A?' dD' D@C A?' = @Ed'
F=B@' ?' F ' DA @ A?' =? ' 1= @%' 1AC>@E%' AC' A ? @C1@ ' E @%' D = @%'
AC' A F@C' ? C J @? %' AC' D=C ' A1' =? ' F' E @%' D = @%' AC' A F@C' ? C T
J @? %' C@ @ J I ?>' AC' ? @?E@E' A' C@ @ J I @%' @ Z @C' GFA ' AC' D=C %'
=? ' E @%' D = @%' AC' A F@C' ? C J @? %' GF F' F= F' : ' AC' F= ' AC'
J = ' I@' A' D !AB E@E%' J =E@%' AC' @E' = ' =1AC@ = E%' AC' 1' =? ' D@C A?'
F= ' = J D' AC' J =C<%' AC' = @' AC' DCA C@' A' I@' = J D@E' AC' J =C<@E%'
=? ' D=D@C' AC' A F@C' I =? @' AC' J = @C = ' GF= A@B@C%' G F' =? '
F' 1= @%' 1AC>@E%' AC' A ? @C1@ ' E @%' D = @%' AC' A F@C' ? C J @? %' AC'
D=C ' A1' =? ' F' E @%' D = @%' AC' A F@C' 1 @ C J @? ' = ' =1AC@ = E' ;' AC' 1'
=? ' D@C A?' F= ' @%' @C%' @ %' AC' @]DA @' A' = @%' AC' F= ' = @'
AC' DCA C@' A' I@' @E%' @C@E%' A E%' AC' @]DA @E' 1AC' = @%' AC' F= '
?AG ?> ' =?E' G FA ' =G1 ' @] @' N F@' DCAA1' GF@C@A1' F= ' ! '
A?' F@' D@C A?' = @Ed' F=B@' ?' F ' DA @ A?' =? ' D=D@C' AC' A F@C'
I =? @' AC' J = @C = ' F=B ?>' F@C@A?' F@' J DC@ A?' AC' =? ' D=C '
A1' F@' J DC@ AD' A1' =? ' F' 1= @%' 1AC>@E%' AC' A ? @C1@ ' E @%'
D = @%' AC' A F@C' ? C J @? %' AC' D=C ' A1' =? ' F%' E @%' D = @%' AC' A F@C'
? C J @? ' = ' =1AC@ = E%' AC' F=B ?>' F@C@A?' =? ' 1= @%' 1AC>@E%' AC'
A ? @C1@ ' = J D' AC' J DC@ A?%' C@ @ J I ?>' AC' C@DC@ @? ?>%' @ F@C'
GFA ' AC' ?' D=C %' AC' ? @?E@E' AC' =I @' A' D= ' AC' F@' J =<@?' 1AC'
F@' = J D%' J =C<%' AC' J DC@ A?' A1' =? ' F ' @%' D = @%' AC' A F@C'
? C J @? %' GF F' F= F' I@@?' AC' F= ' AC' J = ' F@' A' DCAB E@E%' J=E@%'
AC' @E' = ' =1AC@ = E%' <?AG ?>' F' 1= @%' 1AC>@E%' AC' A ? @C1@ '
= J D%' J =C<%' AC' J DC@ A?' A' I@' 1= @%' 1AC>@E%' AC' A ? @C1@ ';' AC' 1'
=? ' D@C A?' F= %' G F' ? @? ' A' E@1C= E' F@C' * =Z@ %' F@C' F@ C ' AC'
@ AC %' DC B= @ ' AC' 1C= E @? ' @%' AC' = @' AC' DCA C@' A'
I@' DC B= @ ' AC' 1C= E @? ' @E%' =? ' E @%' D = @%' AC' A F@C' ? C T
J @? ' A' DCAB E@E%' J=E@%' AC' @E%' AC' F@C@=1 @C' A' I@' DCAB E@E%'
J=E@%%' AC' @E' = ' =1AC@ = E%' AC' F= ' G F' F' ? @? ' DC B= @ ' AC'
1C= E @? ' = J D' AC' J =C<%' AC' = @' AC' DCA C@' A' I@' = J D@E' AC'
J =C<@E%' =? ' D=D@C' AC' A F@C' I =? @' AC' J = @C = ' GF= A@B@C%' G F'
=? ' F' E @%' D = @%' AC' A F@C' ? C J @? ' = ' = ' =1AC@ = E' ;' AC' 1'
=? ' D@C A?' F= ' <?AG ?> ' =?E' G FA ' =G1 ' @] @' N F@' DCAA1'
GF@C@A1' F= ' @' A?' F@' D@C A?' = @Ed' F=B@' ?' F ' DA @ A?' =? '
D=D@C' AC' A F@C' I =? @' AC' J = @C = ' A' DC B= @ ' AC' 1C= E @? '
= J D@E' AC' J =C<@E' = ' =1AC@ = E' ;' F@?' =?E' ?' @B@C ' F' = u'
@B@C ' D@C A?' A' A11@?E ?>%' =?E' @B@C ' D@C A?' <?AG ?> ' =?E'
G 1 ' = E ?>%' = I@ ?>%' AC' = ?>' =? ' D@C A?' ?' AJ J ?>'
=? ' F' A11@? @%' =?E' I@ ?>' F@C@A1' =G1 ' A?B @E%' F= ' I@'
=EZ E>@E' > ' A1' 1@ A? %' =?E' F= ' I@' =I @%' = ' F@' E C@ A?' A1'
F@' A C %' A' I@' C=? DAC @E' I@ A?E' F@' @= ' 1AC' 1@%' AC' 1AC' =? '
@C J ' ?A ' @ ' F=?' @B@?' @=C %' N d' AC' A' I@' J DC A?@E' 1AC' =? '
@C J ' ?A ' @] @@E ?>' 1A C' @=C %' ?AC' @ ' F=?' GA' @=C %' = ' F@'
A C ' F= ' =G=CE H 1>3

1 3' G' 'H' /4' 1' ' H' W]_' /1' GH' 0 &' + '# "/(=2'' =9+**
WM' //' '24/' 4(b' > E " 6 &(+< : <*/ ' 4*#') /4' 2&&' 2(' (/ ; 2J/ ' 2(' 1+<=/

@B@C ; F@?=?E =?E ?@B@C ? F = @ @B@C D@C A? A A11@?E ?> F= 1AC @B@C F A11@? @ I@ =EZ E>@E =1@ A? =?E F= I@ C=? DAC @E 1AC F@ @CJ A1 @B@? @=C 1 3 AC F= I@ JDC A?@E = F'E C@ A? A1 F@ A C I@1AC@ GFAJ F D@C A? F= I@ C @E 1AC =? D@C AE ?A @ F=?> GA @=C H*!43

H I 1 /4 1 UNY = H- /1/ J) "+"/(&2("2=4|) /12J/(= 3/&2(/ 4 = =4+" "/:

@ 7 1 =? D@C A? ?A =G1 = FACqK@N =?E G FA =G1 @] @ N F@ DCAA1 GF@C@A1 F= @ A? F@ D@C A? = @Ed F= D C F= @ AC C@ @ B@ AC =<@ AC F=B@ ?' F AE AC DA T @ A? =? D=D@C J=? 1= C@E =?E DCAB E@E I AC ?E@C F@ E C@ A? A1 F@ AJ J A?@C A1 @ @ AC A F@ D@C A?' AC D@CT A? =DDA ? @E A DCA3 E@ F@ =J@ I F@ AJ J A?@C A1 F@C * =Z@ H C@= C 1AC F@ D CDA @ A1 I@ ?>' @E 1AC DA =>@ AB@C @?B@ AD@ AC =JD =?E 1AC C@ @ B ?>4 F@ JDC@ A?' A1 F@ E @ D = @ AC A F@C ? C J@? DCAB E@E J=E@ AC @E DE@C F@ E C@ A?' A1 F@ AJ J A?@C A1 =JD =?E =]@ AC A F@C D@C A?' AC D@C A? @>= = FAC K@E '? F= I@F= 1 I@1AC@ F' D=D@C F= F=B@ I@@?' E =JD@E G F' F' JDC@ A?' =?E @E 1AC D I @ @B@C F' D@C A?' F= 1AC F' A11@? @ I@ > A1 = J E@J@=?AC =?E I@ ?>' A?B @E F@C@A1 F= = F@ E C@ A?' A1 F@ A C I@1A !@ GFAJ F' D@C A?' F= I@ C @E I@ JDC A?@E 1AC =? D@ EAE ?A JAC@ F=?' FC@@ @=C ?AC @ F=?']' = @?E=C JA? F 1?3

L2() ')' 7+(P (+'4=' 2(:/(=' 1 ' '++:/ <' :/('49/ I' x ' **' I' 1' .A' ((/*+4 ')' 42' 49/ /VP 19/T</(

F@ :' ,' 8 & :% 8% @? @E% 1'3 7 ?' A C@> = @' F@ A11 @ A1 F@ C@ @ D A1 F * =Z@ H] F@b @C = & @ J ? @C%H I @ -9 @?= 7 F= 1' =? D@C A?' F= 1bZ>@% A ? @C1@ % AC = @C% AC = @ AC DCA C@' A' I@ 1AC>@E% A ? @C1@ @E% AC = @C@E% AC <?AG ?> =?E' G ?> = % = E% AC = ?' 1AC> ?>% A ? @CT 1@ ?>% AC = @C ?>% =? G=CC=? % ACE@C 1AC D= J@? % AC A F@C EA J@? GF= A@B@C% I F ' E C@ @E' AC = FAC K@E' A' I@ @E' AC J=E@% AC F= @C' AC D I F' = C @% AC <?AG ?> AC G ?> = % = E% AC = ?' @C ?>' AC D I F ?>' = C @% <?AG ?>' F@ =J@ A' I@ 1AC>@E% A ? @ !1@ @E% AC = @C@E% =? F' G=CC=? % ACE@C 1AC D= J@? % AC 4d F@C EA J@? GF= A@B@C% G F' ? @? A' E@1C= E' F * =Z@ % F@ >AB@C?AC =?E' AJD=? A1 F@ =?<' A1 ?> =?E% AC =? A F@C D@C A?' A D@C A? % =? D@C A?' A' A11@?E ?>' F= I@' E@@J@E' > A1 1@ A? % =?E' F= DA?' A?B A?' I@' C=? DAC @E' I@ A?E' F@ @= 1AC F@ @CJ A1 F ?= C= 1@ H 183

1 3 /'+ =/(J 4<:/ &2(+'#4/(;' 24 /V1//:')' =/J/' +':' 24 */==' 49+'' & J/' #/+(= 4 49/'2 &/'1/'7+= 12 ; ; 44/:' +&4/(- <*# .EYI' J1*' .' "' DH W7 /' 24/' W]b' >E"6 '6#'*! & +':' 49/' N' .M 14 1' GI' J2*' .' "' DG W+ /1' YY' 0&2(49/' ;2(/ /&&/14<+ "(2=/1<4 2'' 2 2&&/'1/= 12 ; ; 44/:'+)+ '=4 49/' "2=4 2&& 1/' /'+14= 049+4 '' +'# 'P : 14 ; /'4 2(1(; '+ */44/(= &2(+'# 2&&/'1/ 12 ; ; 44/:' <"2'' 2('' (/="/14 2& +'# "(2"/(-' 79 19 ; +# 9/ *+ :' '' 2(=4+4/:' 42 3/*2')' 42 49/ 6 _=4 ; +=4/( )/'/(+* 4 =9+* 4/ =<&& 1 /'4 42'=4+4/ +'# =<19 "(2"/(4# 42 3/*2')' 42 +':' *+# 4 '' 0 /(+6/=4#S= "2=4 ; +=4/( )/'/(+* $ +':' 4 =9+* '24 9/ '/1/==+(# 42 ="/1 &# 49/' '+ ; /' 2(+: : 4 2'' 2& +'# =<19 "2=4 ; +=4/( )/'/(+* ? +':' 49+4 79/'/J/(' '+'# 'P : 14 ; /'4 2(1(; '+ */44/(= &2(+'# 2&&/'1/ 12 <&' 44/:' +)+ '=4 49/' "2=4 2&& 1/ 14= 4 =9+* 3/' '/1/==+(# 42 ; /'4 2''&2(+'# "<("2=/ 79+4/J/(' 0 /(+6/=4#S= "2=4 ; +=4/( )/'/(+* $ 4 =9+* 9/ =<&& 1 /'4 42 : /=1(3/ =<19 "2=4 ; +=4/( )/'/(+* += 0 /(+6/=4#S= "2=4 ; +=4/( )/'/(+* $ 7 49 2<4 +'# &<(49/(2(249/('+ ; /' +: : P 4 2'' 2(: /=1("4 2'' 79+4=2/J/(W#0 2 ; <19 2& 49 = 14 += (/*+4/= 42 49/ "(/"+(+4 2'' +':' ==</ 2& /V19/T</(3 ** = (/"/+*/:' 3# 49/' GN +':' HM /4 1' GA W 0 /'+ =/(J 4<:/ &2(* &/' 2(&2(+'# 4/(;' 24 */==' 49+'' & J/' #2+;' & 49/' 2&&/'1/' 7+= 12 ; ; 44/:' +&4/(GA <*# .EYI' J2*' .' "' DH 9 = 14 12'4+ '= '2 "(2J = 2'' &2(49/' "<' =9 ; /'4 2& "('P 1 "+*= '' 49/' =/12' :' :/)(//' +':' +11/=P =2(/= ? =<1* '"('1 "+*= +(/' 4* /(/&2(/' "<' P =9+3*/' * O/' "('1 "+*= '' 49/' & (=4 :/)(//' +':' 49/' +11/==2(/= <':/(49/' GI' GA /4 1' NI' J2*' .' "' .DI'

F@' -' ,' 9' & ' :' ' -8' ' :' @? @E' 7 ?' ' 1AC' @?=I ?>' F ' * =Z@ ' A' E C@ ' F@' @' A1' @] F@b @C' I ' A' =' J @E' =? '? ' 1AC' F@' D CDA @ ' =?E' ?' F@' J=??@C' F@ H@ ?' J @? A?@E' =?E' 1AC' > B ?>' C@ @1' A' C ? E=E' C F' =?=' =?E' ' @'H @?= ' 7 F=' 1' =? ' D@C A?' AC' D@C A? ' F=' 1AC>@' A ? @C1@ ' AC' = @C' AC' = @4' AQ DCA C@' A' II' 1AC>@E' A ? @C1@ @E' AC' = @C@E' AC' <?A * ! ?> ' AC' G 1 '= ' AC' = ' ?' F@' 1AC> ?>' A ? @C1@ ?>' AC' = @C ?>' =? ' @C 1 = @' AC' @C 1 = @ ' A1' F@' = E' AJ J A?@C ' I ' F ' '=DDA ? @E' = ' =1AC@ = E' AC' =? ' A1' F@ J ' AC' =? ' C@ @ D ' AC' C@ @ D ' A' I@' > B@?' I ' FI' = F @C' AC' = F @C ' A1' F@' >AB@C?AC' =?E' AJ D=? ' A1' F@' =?<' A1' ?> =?E' ?!D C =? @' A1' F ' ' AC' F= ' G 1 ' E@ B@C' A' F@' = E AC' A1' F@' C@ @ D ' A1' F ' * =Z@ H' @] F@b @C' 1AC' F@' J @' I@ ?>' AC' A' =? ' A11 @C' =DT DA ? @E' I ' F J ' AC' A' F@' = E' AJ J A?@C ' I ' F ' ' =DDA ? @E' AC' =? ' A1' F@ J ' AC' A' =? ' A11 @C' AC' A11 @C ' =DDA ? @E' I ' F@ J' AC' =? ' A1' FD J ' ?' F@' @] @ A?' A1' F@' DAG@C ' A1' F ' ' AC' F= ' @C' =? ' F' 1AC>@E' A ? @C1@ @E' AC' = @C@E' @C 1 = @' AC' @C 1 = @ ' ZD @ D ' AC' C@ @ D ' <?AG ?>' F @' = J @' A' I@' 1AC>@E' A ? @C1@ @E' AC' = @C@E' G F' ? @? ' A' E@1C= E' F ' * =Z@ ' F ' F@ C ' AC' @ AC ' AC' =? ' IAE ' AC' IAE @ ' DA ' AC' ACDAC= @' AC' =? ' D@C A?' GFA J A@B@C;' F@?' =?E' ?' @B C ' F' = @' = ' =?E' @B@C ' D@C A?' AC' D@C A? ' A' A11@?E ?>' =?E' IA ?>' F@C@A1' =G1 ' A?B @E' F= ' I@' =EZ E>@E' > ' A1' 1@ A? ' =? ' F= ' 11@C' E@= F' = ' ?' = @ ' A1' 1@ A? H 163

2<'4/(&/ 4 ')' 1/(4 & 1+4/=' 2&' 12 ; ; =P = 2 '/(=' 1 ' <' :/(' G ' H **' I ' 1' .GA' (/*+4 ')' 42' /VP 19/T</(' 3 **=' &2(' (/* /& 2&' (' :+: ' (4 =9' ! < +' +' +' :' 4' <1 /

9/' 8 ,' ' ** - ' 1' 8 ' /' 4 4*/ : ' 7 '' 14' &2(') (+' 4 ')' (/* /& 42' 49/' =*+' :' 2& 2 ; ' 1+ $+' :' 42' + ; /' :' 49/' G' H' **' I ' 1' .GA' 3# =/1' 8' NFd /' +14=' 49+4' 0+**' +' :' /J/(# 49/' =/J/(+* 1*+<=/=' "27/(=' "(2J = 2 '=' /' +14 ; /' 4=' "/' +*4 /=' +' :' (/=4(14 2 '=' '' 49/' =+ :' 14' 12 '4+ ' /' :' =2' &+(' +=' 49/' =+ ; /' 1+'' 3/' ; +: /' +"'"* 1+3*/' +' :' +(/' '24' J+(/:' 3# 49 =' 1 ' =9+**' 3/' 4+0/'' 42' /V4/' :' 42' 49 =' 14' +' :' -' 42' /J/(#49 ')' 42' 3/' :2' /' '' "<(=<+' 1/' 2& 49 =' 14' +' :' +=' &' +**' =<19' 1*+<=/=' "27/(=' "(2J = 2 '=' +' :' /' +14 ; /' 4=' 7/(/' 9/(/ '' (/"/+4/ :' +' :' ; +: /' +"'"* 1+3*/' 42' 49]' =+ :' =*+' :' 2& 2 ; ' 1+' +' :' 42' 49/' *2+' =' +' :')(+' 4=' 42' 3/' ; +: /' '' "<(=<+' 1/' 2& 49 =' 14?' +' :' 42' /J/(# ; +44/(' +' :' 49 ')' 42' 3/' :2' /' '' "<(=<+' 1/' 2& 49 =' 14?' +' :' +**' +' :' /J/(# 49/' =/1<(4 /=' 42' 3/' 4+0/'' '' "<(=<+' 1/' 2& 49 =' 14' =9+**' 3/' 4+0/'' '' =<19' ; +' ' /(' +=' 3# 49/' =+ :' 14' =' : (/14/ :' 7 49' (/="/14' 42' 49/' =/1<(4 /=' 49/(/3# +<492(a/ :' 2(' : (/14/ :' 42' 3/' 4+0/' '?' +' :' +**' +' :' /J/(# =<19' =/1<(4 /=' =9+**' 9+J/' =<19' &2(1/' "(2(4# +' :' /&&/14' '' +**' (/="/14=' +=' &' 49/# 7 / /' 4+0/'' '' "<(=<+' 1/' 2& +' :' <' :/(' 49/' +<492(4 /=' 2& 49/' =+ :' '' "+(4' (/1 4/ :' 14?' +' :' +**' +' :' /J/(# 49/' (<*/=' 2(:/(=' +' :' : (/14 2 '=' ; +: /' 2(' 42' 3/' ; + /' 3# 49/' =+ :' 12 ; ; = 2 '/(=' =9+**' +" "*# 42' 49/' =+ :' =*+' :' 2&

a6 3' 9/' .' /4' 1' EI' (/1 4/=' 49 =' =/1P 4 2 '' +' :' 49/' "(/=/' 4' "<' =9 ; /' 4' &2(' 2&&/' 1/=' 12 ' 4+ ' /:' '' 4' 3# =/1' .' 'H' 2& 49+4' 14' +' :' 49/' .M' /4' 1' GI ' = ' +' :' 49/' /' +**' /(J 4<: /' 14=' WJ2*' .' "' DH' ;' =/6 b' =' "/' +# =/(J 4<: /' &2(' * &/' 2(' &2(' +' # /(4 '' '24' */=' 49+' ' & J/' #/+(=' W &' 49/' 2&&/' 1/' 7+=' 12 ; ; 44/ :' +&4/(' GA' <*#' .EY Ib' 2(' ; "(=2' ; /' 4' 7 49' 2(' ; 492<4' 9+(:' *+32<(' '' 49/' 12 ; ; 2 '')+2' 2(' 92<=/' 2& 12((/14 2 '' &2(' +' # 4/(; ' '24' /V1/ / : ')' &2<('#/+(=' +' :' 7 49' 2(' 7 492<4' =2* 4+(# 12<&*</ ; /' 4' &2(' +' # "2(4 2 '' 2(' "2(4 2 '=' 2& =<19' ; "(=2' ; /' 4' '24' /V 1/ / : ')' 2 '/' ; 2 '49' +4' +' # 2 ' /' 4 9/' +' :' '24' /V1/ / : ')' 49(/ /' ; 2<49=' '' +' # 2 ' /' #/+(' / 49/(' 49/' G' 'H **' I ' 1' .GA' '2(' 49/' .' /4' 1' EI ' 12 ' 4+ '' +' # "(2J P = 2 '' &2(' 49/' "<' =9 ; /' 4' 2& "(' 1 "+*=' '' 49/' =/12 ' :' : /) (/' +' :' +11/==2(/=' 9/' "(' 1 "+*=' '' 49/' =/12 ' :' : /) (/' 49/(/&2(/' +(/' "<' =9+3*/' '' 49/' =+ ; /' ; +' ' /(' +=' "(' 1 "+*=' '' 49/' & (=4 : /) (/' ' +' :' 49/' +1P 1/==2(/=' <' : /(' 49/' GI' 'GA' /4' 1' NI' J2*' .' "' .DI' ' 1<3' 2' ; <19' 2& 49 =' =/14 2 '' +=' '12(P "2(+4/=' 2(' +" "* /=' +' # (/"/+*/ :' /' +14P ; /' 4=' =' (/"/+*/ :' 3# HD' 'HE' /4' /' HA

A' 'Y' **' I ' 1' A. V4/' : ')' 49/' G' 'H' **' I ' 1' .GA' 42' 2 ; ' 1+

A J ? = =?E F@ A=? A I@ >C=? @E =?E F@ @ C @ A F@ =<@?? D C =? @ A1 F ?= C@ D@ GF= A@B@C = 1 F@ A=? F@C@I = FAC K@E A I@ J=E@ F=E I@@?= FAC K@:I F@ = E H

L2() ')X 1X 49/ 9+ :2& 49/ !/2 H 1 IA E N

F@ : @A :8 F@:1AC> ?>: F@ F=?E A1 F@ " 6 >" "4*< 4"# 6 b A =? EC=1 AL &C ?>1AC AIT = ? ?>J A?@ 1CAJ F@ =?<A1 ?> =?E =?E F@ @C ?>=? F EC=1 , <?AG ?>F@ =J@ A I@1AC>@E G@C@J =E@ =D = A11@? @ N d

G, 44 I 1 AH E IN L2() ') / 49/ '+1/=2& 2&& 1/(= 0/ / '4 4*/ :42 * (a/ ;2'/# 1 2( ]& 2&& 1/(=2& 49/ 92=" 4+* +4 9/*=/+ 2(*/44/(=2& +442(/# 7 **= 1

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F@' .' @A' :'' ' ,% @? @E% 7 ?' ' A' A? A E= @' =?E' D' M/2' I' =J@?E' @B@C=' ' C@ = ?>' A' F@' (A =' A D = ' 1AC' A E @C ' 1' .Y' =' HH' L2()/(# +' :' =' F@ @=' =?E' 6 F?= ?F=J%HI ' @ ' 9' @?= % F= ' 7 1' =? ' D@C A?' "/(=2 ' +4 2 '" F= ' G ?> ' =?E' <?AG ?> ' D@C A?= @% AC' 1= @ ' = J@' F@' (/*+4 ')' 42' ?=J@' AC' F=C= @C% AC' DCA C@' =? ' A F@C' A' D@C A?= @' AC' 1= @ ' 9/*=/+' "/'P = 2'=' 1 = J@' F@' ?=J@' AC' F=C= @C' A1' =? ' A11 @C% ?A? AJJ A?@E' A11 @C% A E @C% AC' A @C' D@C A?% @? @E' AC' DDA @E' A' I@' @? @E' A' =? ' D@? A?% G=>@ % D= % >C=? % AC' A F@C' = AG=? @' A1' JA?@ % DC K@ JA?@ % AC' C@ @1% E @' AC' D= =I @% AC' DDA @E' A' I@' E @' AC' D= =I @% 1AC' AC' A?' = A ?' A1' =? ' @CB @' EA?@% AC' DDA @E' A' I@' EA?@' I ' =? ' F' A11 @C% ?A? AJJ A?@E' A11 @C% A E @C% AC' A F@C' D@C A?' = ' =1AC@ = E% ?' F ' * =Z@ H' =C J % AC' A F@C' J =C ' @CB @% AC' F= ' D@C A?= @' AC' 1= @ ' = J@' F@' ?=J@' AC' F=C= @C' A1' F@' @]@ AC' AC' =EJ ? C= AC % G 1@% C@ = A?% AC' C@E AC' A1' =? ' F' A11 @C% ?A? AJJ A?@E' A11 @C% AC' A E @C% AC' A F@C' D@C A?' = ' =1AC@ = E% ?' ACE@C' 1C= E @? ' A' C@ @ B@' =? ' D@? A?% G=>@ % D= % >C=? % AC' A F@C' = AG=? @' A1' JA?@ % DC K@ JA?@ % AC' C@ @1' E @' AC' D= =F @% AC' DDA @E' A' I@' E @' AC' D= =I @% 1AC' AC' A?' = A ?' A1' =? ' @CB @ ' EA?@' AC' DDA @E' A' I@' EA?@' I ' =?Z' F' A11 @C% ?A? AJJ A?@E' A11 @C% A E @C% AC' A F@C' D@C A?' = ' =1AC@ = E' ;' AC' 1' =? ' D@C A?' F= ' 1AC>@% AC' A ? @C1@ % AC' = @C% AC' = @' AC' DCA C@' A' I@' 1AC>@E% AC' A ? @C1@ @E% AC' = @C@E% AC' <?AG ?> ' =?E' G

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1 C' F@' AD ? A?' A1' F@'Z E>@ ;' I@1AC@' GFAJ ' 'G=' A? @?E@E' F=' F@' A11@? @' = ' = @E' ?' F ' ?E J @? ' G=' ?A ' =?' A11@? @' AJDC@T F@?E@E' ?' F@' = @' C@ @E%' F@C@' I@ ?>' ?A' = @>= A?' A1' =?' = = ' @] ?>' D@? A?' D= =I @' A' AJ@' D@C A?%' I ' A? ' A1' =' D@? A?' DDA @E' A' I@' D= =I @ ' F@' F @C' D=C ' A1' @ ' 9' C@= @E' ?A' A11@? @%' @] @D ' ?' C@ D@ ' A1' =' D@? A?' = = 'q?' @] @? @%' =?E' F@C@' J ' I@' AJ@' D@C A?' ?' @] @? @' A' GFAJ ' 'G=' D= =I @ ' F@C@' G@C@' ?' F ' IC=? F' A1' F@' @ A?' ?A' F' GACE ' = ' 7 DT DA @E' A' I@' E @' =?E' D= =I @' ;H FA @' GACE ' G@C@' 1A JE' ?' F@' 1 C ' D=C ' A1' F@' @ A?%' =?E' F@ ' =DD@=C@E' A' F=B@' I ' ?' ? @? A?= ' AJ @E' ?' F@' @?= ?1I ?' C@ D@ ?>' F ' A11@? @' ' @B@?' 1' F@' GACE ' G@C@' ?' F@' = @%' F@' = @>= A?' GA E' I@' I=E' 1AC' ?? @C = ? %' ?= J F' = ' 'E E' ?A ' = @' I ' GFA ' F@' D@? A?' G=' DDA @E' A' I@' D= =I @;' ' J >F ' I@' =' DDA A?' ?' F@' J ?E' A1' F@' DC A?@C' A? %' =?E' F= ' GA E' ?A ' I@' @?A >F ' ' F@' Z E>@ ' DC@ @? ' G@C@' = ' A1' AD ? A?' F=' F@' A?B A?' G=' C >F ' N@] @D ' @E= @%' %' =?E' A @C E>@%' %' GFA' FA >F ' A F@CG @d%' =?E' F@' A?B A?' G=' =11 CJ @E%' 7!3

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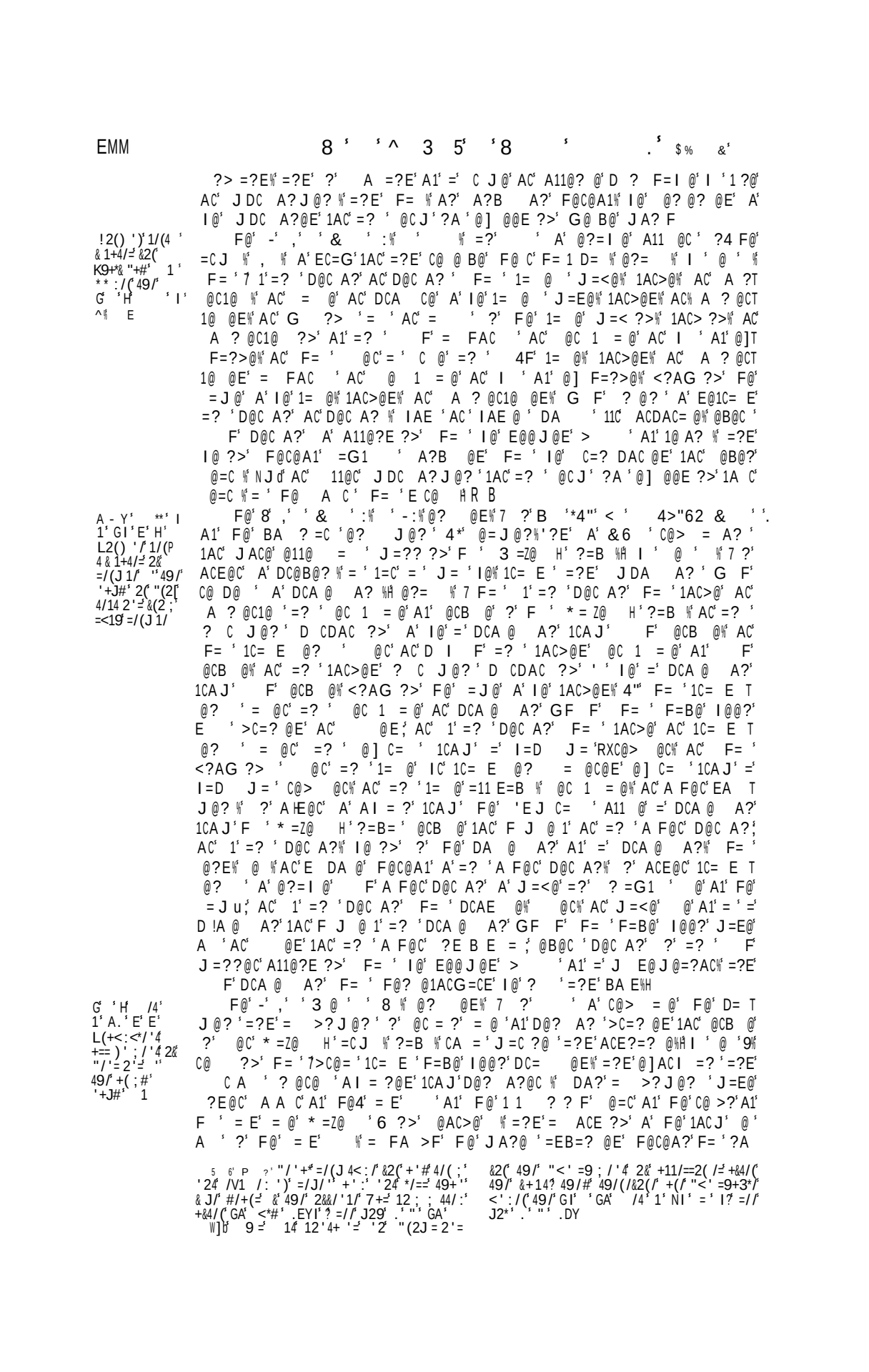

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D=C F' ' F= ' I@' =G1 ' 1AC' F@' ACE ' =?E' A F@C ' A J J A?@C '
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D= =I @' I ' F' A J J A?@C ' ' 1AC' @]@ ?>' F@' A11 @' A1' ACE' >F' E J C= '
AC' A J J A?@C ' 1AC' @]@ ?>' F@' A11 @' A1' ACE' >F' E J C= '
G F' C@ D@ ' A' ?=B= ' =?E' J =C ?@' D@? A? ' AC' A F@C' = AG=? @'
J J @E = @ ' A' =<@' =G= ' F@' D@? A?' 1CA J' F@' D@C A?' A' A11@?E4'
?>' AC' A' D@?E' 1AC' = ? Z' E@1 ? @' D@C AE' F@' 1 C@' D= J @? '
F@C@A1' ; =?E' 1' =? ' D@C A?' AC' D@C A? ' F= ' DCA C@' AC' ?E @' ='
D@? A?@C' A' J =<@' AC' = E' AC' = ' F J ' ?' J =< ?>' =? ' = >? J @? '
A1' D@? A?' D@C=?? = A?' AC' A F@C' = AG=? @' = ' =1AC@ = E' A' =? '
D@C A?' AC' D@C A? ' A F@C' F=?' F@' > =CE =? ' A1' =? ' ? A?' AC' D=C F'
= ' =1AC@ = E' AC' F@' F C FG=CE@? ' =?E' AB@C @@C ' A1' F@' D=C F'
GF@C@ ?' F' D@? A?@C' C@ E@ ' AC' =? ' F@C AC ' =?E' < C<' @ A?' ?'
A =?E' = ' =1AC@ = E' AC' F= ' J =<@' AC' = E' AC' = ' ?' J =< ?>' =? '
= >? J @? ' GF ' F' ' = ' ?A ' I@' > B@?' I ' F@' = E' D@? A?@C' AC'
D@C A?' @? @E' A' A F@C' = AG=? @' = ' =1AC@ = E' =?E' C@ @ B@E' I '
F@' = E' > =CE =? ' D=C F' A11 @C ' AC' F@C AC ' =?E' < C<' @ A?' = '
=' @ C ' 1AC' C@ @1' > B@?' AC' J A?@ ' >C=? @E' AC' =EB=? @E' A ' A1'
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I C ?>' F@' > =CE =? ' F C FG=CE@? ' =?E' AB@C @@C ' AC' F@C AC '
=?E' < C<' @ A?' =EB=? ?>' F@' = J @' AC' F= ' C@ @ B@' AC '= @D ' = '
D= J @? ' AC' @ C ' 1AC' J A?@ ' AC' 1AC' >AAE ' =EB=? @E' AC' =>C@@E' A'
I@' =EB=? @E' A' AC' @? ' AC' > B@?' A' =? ' F' D@? A?@C' AC' D@C A?'
@? @E' = ' =1AC@ = E' AC' F= ' E@ J =?E' AC' F=C>@' =? ' ? @C@ ' AC'
D@ ? =C ' AC' A F@C' A J D@? = A?' 1AC' =EB=? ?>' J A?@ ' DA?' =? '
D@? A?' AC' A F@C' = AG=? @' A' = >?@E' AC' =<@?' AC' DC@ @?E@E' A'
I@' = >?@E' AC' =<@?' F' D@C A?' AC' D@C A? ' F= ' 1AC' @B@C ' F'
A11@? @' I@' E@@ J @E' > ' A1' =' J E@ J @=?AC' =?E' F= ' DA?' @B@C '
A?B A?' F@C@A1' I@' D ? F@E' I ' F' 1 ?@' AC' J DC A? J @? ' AC'
IA F' = ' F@' A C ' I@1AC@' GF F' F' D@C A?' AC' D@C A? ' F= ' I@'
A?B @E' F= ' =EZ E>@ H
@ ' ' 7 1' =? ' D@C A?' F= ' 1AC>@' AC' A ? @C1@ ' AC' = @C' AC' /1' N'
= @' AC' DCA C@' A' I@' 1AC>@E' A ? @C1@ @E' AC' = @C@E' AC' <?AG a'
?> ' =?E' G ?> ' = ' = E' AC' = ' ?' 1AC> ?>' A ? @C1@ ?>' bC' 12" /=' +=) ' '
= @C ?>' =? ' J ? @' AD ' A1' J ? @' = >? J @? ' A1' D@? A?' D@C ' ?' ? ' A1' D@?'
=?? = A?' AC' A F@C' = AG=? @' = ' =1AC@ = E' ACE@C' @C 1 = @' C@ @ D '
EA J @? ' AC' = FAC ' GF= A@B@C' C@ = ?>' A' AC' ?' =? G @' A?T
@C? ?>' F@' = J ?>' AC' A I = ? ?>' D= J @? ' A1' =? ' D@? A? J A?@ '
AC' A F@C' = AG=? @' = ' =1AC@ = E' AC' F= ' @C' AC' D I F' = ' C @' Ac'
<?AG ?> ' =?E' G ?> ' = ' = E' AC' = ' ?' @C ?>!AC' D I F ?>'
= ' C @' <?AG ?>' F@' =J @' A' I@' 1AC>@E' A ? @C1@ @E' AC' = @C@E'
=? ' F' J ? @' AD ' = >? J @? ' ACE@C' @C 1 = @' C@ @ D '
EA J @? ' AC' = FAC ' C@ = ?>' A' AC' =? G @' A? @C? ?>' F@

J2(' ' H' L

= J ?>' AC' A I = ? ?>' D= !J @? ' A1' =? ' D@? A? J A?@ ' AC' A F@C' = AG=? @' = ' =1AC@ = E%' AC' F@' ?= J @' A1' =? ' D@? A?@C%' Z @' A1' F@' D@= @%' > =CE =?%' D=C F' A11 @C%' AC' A F@C' A11 @C%' AC' =? ' A F@C' D@C A?' = FAC K@E%' AC' DDA @E%' AC' D CDAC ?>' A' I@' = FAC K %' A' >?' =? ' F' J ? @%' AD %' = >? J @? %' ACE@C%' @C 1 = @%' C@ @ D %' EA J @? %' AC' = FA ! %' G F' ? @? ' AC' ?' AC'@C A' A I = ?' AC' A' @?=I @' =? ' A FuC' D@C A?' A' A I = ?%' F@' D= J @? ' A1' =? ' F' D@? A?' AC' D@? A? J A?@ %' AC' A F@C' = AG=? @' = ' =1AC@ = E' 1CA J' F@' A J J A?@C ' A1' F@ @=' A D = ' AC' @C' * =Z@ H' D= T J = @C >@?@C=' C@ D@ B@ %' AC' 1CA1 =' =? ' A1 '%' ?E@C' A11 @C% @C<%' AC' @CB=? ' A1' F@' = E' A J J A?@C ' A1' F@ @=' A D = %' AC' A1' @C' * =Z@ H' D= J = @C >@?@C=' C@ D@ B@ %' AC' 1CA J' =? ' D@C A?' = FAC K@E' AC' DDA @E' A' I@' = FAC K@E' A' D= ' =? ' D@? A?' AC' D@? A? J A?@ ' AC' A F@C' = AG=? @' = ' =1AC@ = E%' @B@C ' F' D@C A?' A' A11@?E ?>' F= ' I@' > ' A1' 1@ A? %' =?E' F= ' =?E' J = ' I@' C=? DAC @E' NAd 1AC' F' @C J' A1' @=C %' AC' 11@C' F' A F@C' D ? FT J @? ' = ' F@' A C ' I@1AC@' GF F' F' D@C A?' AC' D@C A? ' F= ' I@' A?B @E' F= ' =EZ E>@ H 7E3

"/ '+*4# ' &(+<:' (/="/14P ')' "/ '= 2'=

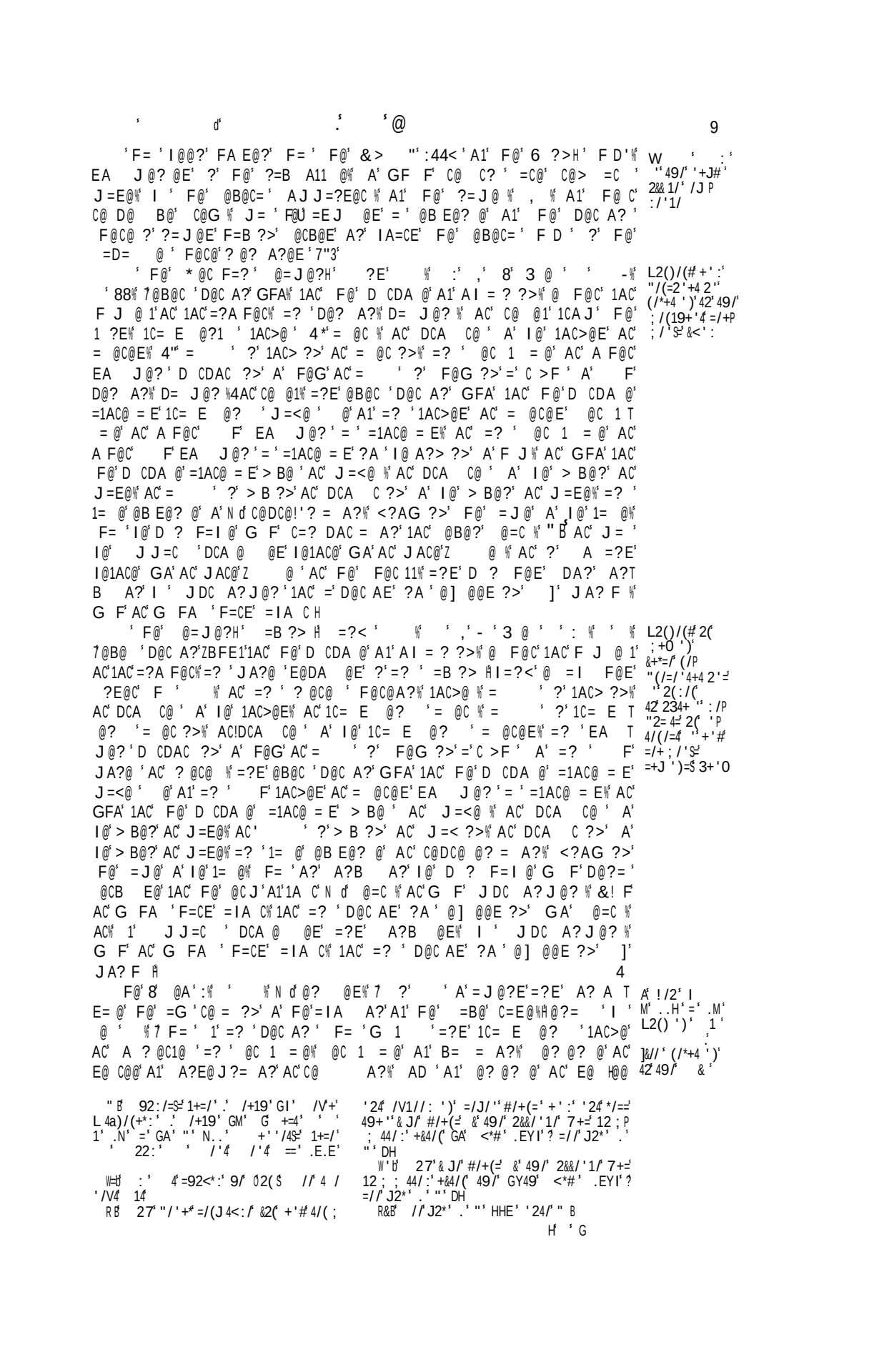
' F@' D@? A?@C ' N C@@?G F' X ?E' F@ @=d' %' ' ,' ' 3 @ ' ' 8%' ' 8%' 7=? ' D@C A?' 2>! '' 4*' *"6>#> '' " ! ! 2' 4"' @?E@=BA C ?>' A' C@ @ B@' D@? A? J A?@ %' AC' J A?@ ' ?' < ' ?= C@' A1' D@? A?%' 1CA J' F@' @@C@ =C = G=C%' 4"' *"4&' 6 '' A11 @C' AC' D@C A?' @ J D A @E' AC' = FAC K@E' A' D= ' D@? A? %' F= ' DA?' A?B A?' I@' IZ@ @E' A' F@' =J @' D= ? ' =?E' D@?= @ ' = ' =C@' DC@ C I@E' I ' =G' ?' F@' = @ ' A1' 1C= E ' A J J @E' AC' = @ J D @E' A' I@' A J J @E' DA?' F@' A J J A?@C ' A1' F@ @=' A D = C F@' ZA CE' >F' ET J C=' AC' F@' A J J A?@C ' A1' F@' =E J C= %' F@' C@= C@C' A1' F@' ?=B %' =?E' F@' D= J = @C >@?@C= H

L2() ')' +' "27/(' 2& +442(P ' /# 42' (/1/ J/' "(-/ ; 2' /# 92*: /'' 42' 3/' +' 1+" 4+' 2&&/ ' 1/' 492<)9' '24' '' 49/' &2(; '"(/P =1(3/ :' 3# ' "+(4 1<'+(' =4+4<4/ ' IA' ! /2' H ' 1 ' DG' =' NG

' DA ? ' J = ' I@' F@C@' ?A @E%' GF F' =CA @' DA?' F@' A? C A?' A1' F@' = @ ' I ' GF F' DAG@C ' A1' = AC?@ ' A' E@ @ B@' DC K@ J A?@ ' G@C@' C@> = @E ' F@' DC A?@C' F=E' I @@?' A?B @E' DA?' =?' ?E T J @? ' GF F' A? = ?@E' A ? ' F=C> ?>' F J ' G F' F=B ?>' 1AC>@E' =' DAG@C' A1' = AC?@ ' A1' A?@' ' %' =' J E F D J =?' ?' F ' * =Z@ H' @CT B @%' A' C@ @ B@' @C = ?' DC K@ J A?@ ' F@ ?' E @%' =?E' = A' A ? ' A?' F@' -' @A ' -%' ' -8%' F=C> ?>' F J ' >@?@C= ' G Z' F@' 1A !>@C ' A1' =' E@@E' ' F@' :8' @A ' %' ' . -%' ' -%' =' 1AC J ' G= ' DC@ C I@E' 1AC' =' ?@>AT = I @' ACE@C%' I ' =' D@ ' A11 @C' A?' F@' =>@? ' AC' C@= C@C' A1' C@@?T G F' A D = %' G F' =' @C 1 = @' IZA ?@E%' , %' =?E' F@' DC ? D=' DA ? ' J =E@' A?' I@F= 1' A1' F@' DC A?@C' G= %' GF@ F@C' F ' DC@ C I@E' 1AC J ' A1' =?' ACE@C' ?B= E= @E' @B@C ' DAG@C' 1AC' F@' D CDA @' A1' C@T @ B ?>' DC K@ J A?@ ' A F@E' ?' A F@C' @C J ' =?E' ?' =' E 11@C@? ' 1AC J' 4 F=?' G@C@' A? = ?@E' ?' F= ' = @ ' ' ?E@C AAE' F= %' F@' DA ? ' I@ ?>' I J @E' A' F@' A? E@C= A?' A1' F@' G@ B@' Z E>@ %' = ' A1' F@ J ' N@] @D ' C=F=J %' %' GFA' E @? @Ed' FA >F ' F= ' F@' 1AC> ?>' =' DAG@C' A1' = AC?@ %' FA >F' ?A ' ?' F@' D H@ C I@E' 1AC J %' G= ' =' =D = ' A11@? @%' =?E' F= ' F@' A?B A?' G= ' C >F ;' =?E' F= ' J A ' A1' F@' Z E>@ ' FA >F ' F= ' F@' DAG@C' A1' = AC?@ ' ?' b @ A?' G= ' =' E@@E' G F ?' F@' -' @A ' -%' ' -8 ' "OB

W2b' 27' "/ '+*' =/(J 4<: /' &2(' + '# 4/(; ' 2&' #/+(=' '24' */=='49+'' & J/' &' 49/' 2&&/ ' 1/' K7+=' 12 ; ; 44/ :' +&4/(' GA' <*#' .EYI' 6 =/ /' J2*' . ' "' ; DH

" 98' 9 =' 14' 12 '4+ '=' '2' "(2J = 2 '' &2(49/' "<' =9 ; / ' 4' 2&' +11/==2(/=' +&4/(' 49/ &+14' ? 49/#' 49/(/&2(/' +(/' "<' =9+3*/' <' : /(49/' GI' ' GA' /4' 1 ' NI ' =' I' ? =// J2*' . ' "' .DY W6b' /V' ' 10/44=' #2' ' ' .E.H'



9 : 8 ' ' ^ 3 5' '8 ' .' $ % &'

A1' A?E@ J ?= A?' AC' C@ A?%' AC' =? ' C@ @ D ' N F' C@ @ D ' I@ ?>'
C@b C@E' I ' F ' d%' AC' =? ' D=C ' A1' F' @C 1 = @%' @C 1 = @' A1'
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A1' @? @? @' AC' E@ C@@' A1' A?E@ J ?= A?' AC' C@ A?%' AC' C@ @ D ' =
=1AC@ = E;' AC' F= ' <?AG ?> ' =?E' G 1 ' @C' AC' D I F' F@'
=J @%' <?AG ?>' ' A' I@' 1AC>@E' ^8C A ? @ 1@ N@E%' G F' ? @? ' A'
E@1C= E' F ' * =Z@ %' F ' F@ H' AC' @ AC %' AC' =? ' A F@C' D@C A?'
AC' D@C A? ' GF= A@B@C%' AC' =? ' IAE ' DA ' AC' ACDAC= @;' F@?' =?E'
?' @B@C ' F' = @' F@' D@C A?' AC' D@C A? ' A' A11@?E ?>%' =?E' F@ C'
DCA C@C %' A ? @ AC %' = E@C %' =?E' = I@ AC %' F= ' I ' =?E' =C@' F@C@ I '
E@ =C@E' A' I@' 1@ A? %' =?E' F= ' I@' C=? DAC @E' I@ A?E' @= ' 1AC' ='
@C J '?A ' @] @@E ?>' 1A C @@?' @=C %' AC' F= ' I@' A?1 ?@E' =?E' <@D ' A'
F=CE' = I A C' 1AC' =' @C J ' ?A ' @] @@E ?>' 1 B@' @=C %4?AC' @ ' F=?' FC@@'
@=C %' = ' F@' E C@ A?' A1' F@' A C ' I@1AC@' GFA J' F' A11@?E@C' AC'
A11@?E@C ' F= ' I@' C @E' =?E' A?B @E H15 3

A' 'Y' 7 ; ' .' ' IA' =' .G' L2() ')' (/[' 1/ "4=' 1/ (4 P & 1+4/=' 1 ' <' : /('4 -/ 14=' &2(' +32* =9 ')' =*+J/ (#

F@' 8' ,' ' & ' :%' ' :8%' @? @E%' !' ?' ' A' =CC ' ? A'
1 C F@C' @] @ A?' F@' DCAB A? ' A1' =?' ' D= @E' ?' F@' F CE' =?E'
1A C F' @=C ' A1' F ' DC@ @? ' * =Z@ %' 1AC' A J D@? = ?>' AG?@C '
A1' =B@ ' DA?' F@' = I A A?' A1' =B@C %' ' @ ' -' @?= %' F = !' 1'
=? ' D@C A?' AC' D@C A? ' F= ' 1AC>@' AC' A ? @C1@ %' AC' = @' AC' DCAT
C@' A' I@' 1AC>@E' AC' A ? @C1@ @E%' AC' F= ' G ?> ' = ' AC' = '
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GFA @' A1' AC' =? ' D=C ' AC' D=C ' A1' F@' A? C I A? ' AG=CE ' F@'
= E' J ' A1' 1 1 @@?' J A? %' @ F@C' G F' AC' G FA ' F@' ?= J @' AC'
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C I AC' AC' A? C I AC ' F@C@ A%' D= @C' AC' D= @C ' F@C@A1%' AC' A1' =? '
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@E' I ' F@' A J J A?@C '1AC' F@' C@E A?' A1' F@' ?= A?= ' E@I %'
AC' F= ' = @C' =? ' ? J I@C%' 1 > C@%' AC' GACE' F@C@ ?%' AC' @C' AC'
D I F' = ' C @' =? ' F' 1= @%' 1AC>@E%' A ? 1@C1@ @E%' AC' = @C@E'
C@ @ D ' AC' C@ @ D %' @C 1 = @' AC' @C 1 = @ %' ? C J @? ' AC' ? C T
J @? %' G F' ? @? ' A' E@1C= E' F@' >AB@C?AC' =?E ' A J D=? ' A1' F@'
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D@C A? ' GF= A@B@C%' @B@C ' F' D@C A?' AC' D@C A? ' A' 1AC> ?>' AC'
A ? @C1@ ?>%' AC' = ?>' AC' DCA C ?>' A' I@' 1AC>@E' AC' A ? @CT
1@ @E%' AC' G ?> ' = ?>' AC' = ?>' ?' F@' 1AC> ?>' AC' A ? @CT
1@ ?>%' AC' = @C ?>%' @C ?>%' AC' D I F ?>' = ' =1AC@ = E%' I@ ?>'
F@C@A1' A?B @E' ?' E @' 1AC J' A1' =G%' F= ' I@' =EZ E>@E' > '
A1' 1@ A? %' =?E' F= ' 11@C' E@= F' = ' =' 1@ A?' G FA ' I@?@1 ' A1'
@C> H NRd

L2() ')' 1 O 1/(4 & 1+4/= Y' ! /2' I' /' DE' =' GA

4' F@' ' @A' :%' ' %' '-8%' @?= %' ! F = ' 1' =? ' D@C A?' F= ' <?AGT
?> ' AC' G 1 ' 1AC>@' AC' A ? @C1@ %' ? @CF?@%' @C= @%' AC' = @C%' AC'
DCA C@' A' I@' 1AC>@E' AC' A ? @C1@ @E%' ? @C ?@E%' @C= @E%' AC' = @C@E%'
=? ' @C 1 = @' E C@ @E' AC' C@b C@E' A' I@' >C=? @E' I ' =? ' ACE@C' A1'
F ' * =Z@ %' F ' F@ C ' AC' @ AC %' ?' A ? @ %?AG' ?' 1AC @' AC' F@C@T
=1 @C' A' I@' J =E@%' A F ?>' b =C=? ?@%' AC' F= ' D I F' =? ' F'
1AC>@E' AC' A ? @C1@ @E%' ? @C ?@E%' @C= @E%' AC' = @C@E' @C 1 = @%'
<?AG ?>' F@' = J @' A' I@' 1AC>@E' AC' A ? @C1@ @E%' ? @C ?@E%' @C= @E%'
AC' = @C@E%' AC' F= ' <?AG ?> ' =?E' G 1 ' @C' =?E' D I F' =?

"N@' 9 =' "(2J = 2 '' =// ; =' '1 : / '4+**# 12*2' /=
(/"/+*/ :' 3# 49/' H' ' I' **' I' 1' DH' ROB' //' .' 14' 1' EI' ==' .' 'H' +' :'
79 19' +32* =9/=' =*+J/ (#' 49/' (4 =9 HD' 'EE' /4' 1' HA

F' @C 1 = @% G F' ? @? ' A' A I = ?' F@' @1 1@ ' A1' =' C @' @C 1 = @' A' I @' > B@?' F@C@ A% <?AG ?>' F@' A? @? ' A1' F' @C 1 = @' A' I @' 1= @ '' F@' AC' F@' F= ' I @' > ' A1' 1@ A? H 7 ' 3

' F@' - :' ,' -8' 3 @ ' ' 9% ' % 7 GFA A@B@C% G F' ? @? ' A' E@T 1C= E% F= !1AC>@' AC' = @C' =? ' @C 1 = @% C@DAC % @? C % ?EAC @ J @? % E@ =C= A?' A1' C '' ?A @% E C@ A?% = FAC % ? C J @? % AC' G C ?>' J =E@' AC' D CDAC ?>' AC' =DD@=C ?>' A' I @' J =E@' I ' F@' = A ? =? ' >@?@C= % AC' =? ' A F@C' A11 @C' A1' F@' A C ' A1' F=? @C ' ?' ?> =?E' AC' C@ =?E% AC' < ' ' 'C>#2 ' 4"' 4**! "' 4 *' < ' ` 6 # #' U 6 ' J 4>" ' ! ' " 6 # ' 4"' : '' 6 ' '4**! "' K*6 ' ' J 4>" '! ' U 2 6 #' 4"' " 6 # ' AC' I ' =? ' = F @C' AC' A F@C' A11 @C' AC' @C<' A1' F@' >AB@C?AC' =?E' A J T D=? ' A1' F@' =?<' A1' ?> =?E' A1' C@ =?E% AC' F@' ?= J @% F=?ET G C ?>% AC' >?= C@' A1' =? ' F' = A ? =? >@?@C= % Z E>@% = F @C% A11 @C% AC' @C<' = ' =1AC@ = E% AC' F= ' A11@C% @C% E DA @' A1% AC' D ' A11' =? ' F' @C 1 = @% C@DAC % @? C % ?EAC @ J @? % E@ =C= A?' A1' C % ?A @% E C@ A?% = FAC % ? C J @? % AC' G C ?>% <?AG ?>' F@' = J @' A' I @' 1AC>@E' AC' = @C@E% F= ' I @' > ' A1' 1@ A? % =?E' I @ ?>' A?B @E' F@C@A1' F= ' I @' Z=I @% = ' F@' E C@ A?' A1' F@' A C % A' I @' <@D ' ?' D@?= ' @CB E@' 1AC' =? ' @C J ' ?A ' @] @@E ?>' 1A C @@?' @=C ' =?E' ?A ' @ ' F=?' FC@@' N d @=C ` AC' A' I @' J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' @=C % G F' AC' G FA ' F=CE' =I A C% =?E' G F' AC' G FA ' A =C ' A?1 ?@ J @? H N=d 4

?' =' = @' DA?' F@' -' @A' % ' -% F@' DC A?@C' G=' ?E @E' 1AC' 1AC> ?>' =' GC ?>% D CDAC ?>' A' I @' 6 ' 4**! 4E' ' 4 *' 6 " E4" ' 4 *' < ' 6 4&E 6 2 "6 ' A1' J A?@ ' I @ ?>' D= E' ? A' F@' I =?<' D C =? ' A' =?' ACE@C' A1' ' F=? @C % =?E' = A' 6 ' 4**! 4E' ' 4 *' 6 ' !*! 6 ' 4 *' 4 ' 4 *' < ' 6 <! " ' 4 *' < ' : 6 ' A1' F@' D= J @? ' A1' F@' J A?@ ' ? A' F@' I =?<' F@' @ A?E' A ? ' &= ' 1AC' D I F ?>' F@' = J @% <?AG ?>' F@ J' A' I @' 1AC>@E% G F' ? @? ' A' E@1C= E% , ?E' F@' F CE' =?E' 1A C F' A ? ' G@C@%4' F@' A?@' 1AC' 1AC> ?>% F@' A F@C' 1AC' D I F ?>' =' GC ?>' ?' 1AC J' A1' =' GC ?>' D CDAC ?>' A' I @' 6 ' 4C**! 4E' ' 4 *' < ' !=* 6 ' 4 *' < ' 6 4&E 6 2 "6 ' =?E' 6 ' 4**! 4E' ' 4 *' < ' " !E ' 4 *' < ' 6 <! "' 4 *' < ' <6 ' F@' @C 1 = @' =?E' C@ @ D ' G@C@' @ ' A ' B@C I = J' ?' = ' F@' A ? % =?E' F@' A11@? @' G= ' = E' A' I @' EA?@' G F' ? @? ' A' C1 @1C= E' & =J' ? ' DA?' F@' C = ' =' D@ = ' B@CE ' G= ' 1A ?E% GF F' G= ' =1 @CG=CE ' =C> @E' I @1AC@' ACE' * =? 1 @ E' =?E' ? ?@' A1' F@' A F@C' Z E>@ ' 1 @C' F@' =C> J @? ' ACE' * =? 1 @ E' A I @CB@E% F= ' F@' B@CE ' @1 ' I ' A?@' b @ A?' A' A?T E@C% ?= J @ % GF@ F@C' F@' A11@? @' G= ' G F ?' F@' -' @A' % ' -% ' % =?E' ?' =' I @b @?' @C J % @ @B@?' A1' F@' Z E>@ ' G@C@' A1' AD ? A?' F= ' < ' ! #! & ' 6 #' E !6 ' "#! ' 5 " ' >**! ! ' =?E' ?@@E@E' ?A' = J @?E J @? ;' =?E' F= ' F@' = @' G= ' G F ?' F I ' = @% 1:3

L2() ')' '+ ; /' 2&' +112<' 4+' 4[') / ' /(+*' 1 ' 2&' 2<(4' 2&' 9+' 1/(#' '' ')*+' :' 2(' (/*+' :' 2(' 2&' +' # 6<:) /' 2&' 49/' +' : /:' =4+4/=' 2<(4' '' (/*+' :

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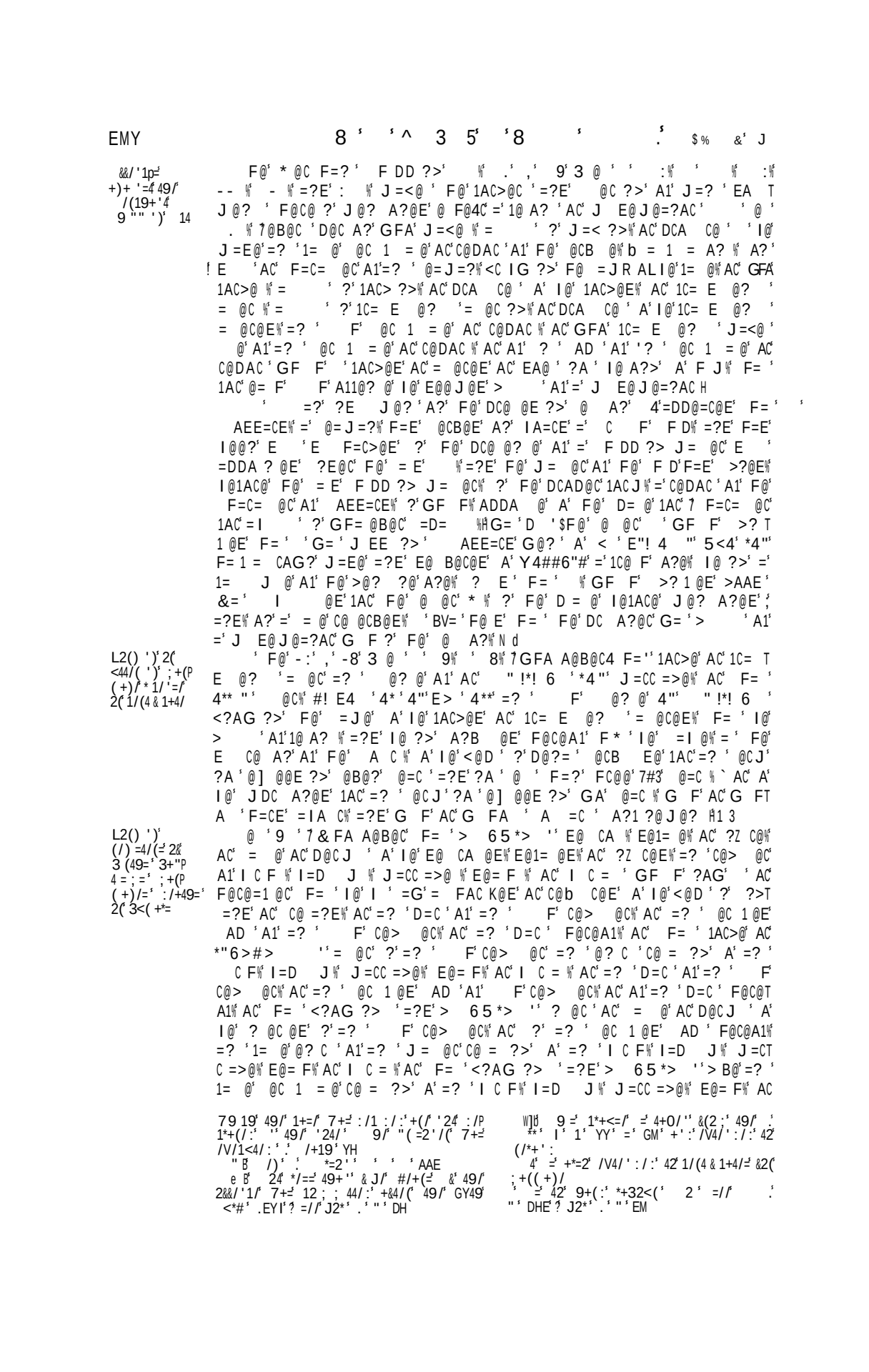

I C = ⅋ AC F= ' @C 1 '=? 'GC ?>' A' I@'=' AD 'AC@] C= '1CA J'=? '
F'C@> @C⅋ <?AG ?>' > <'5"! ! 2 '4"' F@' D=C ' A1' F' C@> @C'
GF@C@A1' F' AD 'AC@] C= ' F= ' I@' A'>B@?⅋ A' I@' 1= @' ?' =? '
J= C = 'D=C =C⅋ AC F= '1AC>@' AC A ? @C1@ ' F@' @=' A1' AC 'I@T
A?> ?>' A' =? 'C@> @C' A11 @' AC I C = ' IA=CE⅋ AC F= ' A11@C⅋ @C⅋
E DA @' A1⅋ AC D 'L11'=? ' F' C@> @C⅋ @? C ⅋ @C 1 @E' AD ⅋ @C T
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F= 'A11@C⅋ @C⅋E DA @' A1⅋ AC D 'A11'=? ' AD 'A1'=? '@? C ' ?'=? '
F'C@> @C⅋ <?AG ?>' F' @? C ' A' I@' 1= @⅋ 1AC>@E⅋ AC = @C@E⅋
F= ' I@'> 'A1'1@ A? ⅋=?E'I@ ?>' A?B @E' F@C@A1' F= 'I@' =I @⅋
= ' F@'E C@ A?'A1' F@' A C⅋ A' I@'<@D ' ?'@?= ' @CB E@'1AC' 1@⅋
AC 1AC'=? ' @C J' ?A ' @ ' F=?' FC@@'NMd' @=C ⅋ ` AC A' I@' JDC A?@E'
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@ ' .' 7 & FA A@B@C F= '<?AG ?> '=?E' G 1 ' ? @C ' AC = @'
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B @E' F@C@A1' F= ' I@' =I @⅋ = ' F@'E C@ A?'A1' F@' A C⅋ A' I@'
<@D ' ?'D@?=' @CB E@'1AC' 1@⅋ AC 1AC'=? ' @C J' ?A ' @ ' F=?' FC@@'NMd'
@=C ` AC A' I@' ?1DC A?@E' 1AC'=? ' @C J' ?A '@] @@E ?>' GA' @=C ⅋
G F' AC G FA ' F=CE' =IA C⅋ =?E' G F' AC G FA ' A =C ' A?1 ?@T
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.D' .E /4' 1' EM' =' YH' 3⅋ 79 19' 49/'
+ ; /' : ; /'4 =⅄ 42' 3/' ; +:/' 3⅋ 49/' =9/(&&
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" B 9⅄ 1*+<=/' ⅄ 4+0/'' &(2,:' 49/' .'
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'' 27/'S' 1+=/' .' /' ' ' ' GG'
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=4/+:' /'4(/=' 79 19' &')/'< '/' 72<*:'
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‘ F@‘ ‘ ,‘ .‘ & ‘ :‘ ‘ 9 ‘ ‘ : ‘ 7@B@C ‘ D@C A?‘ GFA‘ F= ‘ G T 1 ‘ J =<@‘ AC‘ = @‘ A‘ I@‘ J =E@‘ 1AC‘ F@‘ D CDA @‘ A1‘ I@ ?>‘ ? @C @E‘ ?‘ =? ‘ C@> @C‘ A1‘ I H F‘ E@= F‘ AC‘ J =CC =>@‘ =? ‘ 1= @‘ = @ J @? ‘ A F ?>‘ =? ‘ A1‘ F@‘ D=C =C ‘ F@C@ ?‘ C@b C@EB‘ A‘ I@‘ <?AG ?7=?E‘ C@> @C@E‘ F= ZI@‘ IZ@ ‘ A‘ F@‘ = J @‘ D= ? ‘ =?E‘ D@?= @ ‘ = ‘ 1‘F@‘ G@C@‘ > ‘ A1‘ D@CZ C H 7C3‘ 4 e‘

(49=‘ + ' :‘ /+49=‘ /) = ‘ ‘ 14 '

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04‘ J F‘ A1‘ F ‘ @ A?‘ = ‘ C@ = @ ‘ A‘ C@> C=C ‘ AC‘ C@> @C ‘ A1‘ I C F ‘ =?E‘ E@= F ‘ ‘ C@D@= @E‘ I ‘ .‘ ,‘ 9‘ 3 @ ‘ ‘ 99‘ N C F ‘ =?E‘ # @= F ‘ (@> C= A?‘ ‘ 9 . :d‘ =?E‘ I ‘ ‘ : ‘ A1‘ F ‘ ? ‘ D@C A?‘ GFA‘ A J J ‘ =? ‘ A1‘ 1@‘ 1A AG ?>‘ 4A11@? @ ‘ F= ‘ ‘ A‘ = ‘ 4

N d‘ & 1 ‘ J =<@ ‘ =? ‘ 1= @‘ =? G@C‘ A‘ =? ‘ b @ A?‘ D ‘ A F J ‘ I ‘ =‘ C@> C=C‘ C@ = ?>‘ A‘ F@‘ D=C =C ‘ C@b C@E‘ A‘ I@‘ C@> @C@E‘ A? @C? ?>‘ =? ‘ I C F‘ AC‘ E@= F‘ AC‘ G 1 ‘ > B@ ‘ A‘ =‘ C@> C=C‘ =? ‘ 1= @‘ ?1AC J = A?‘ A? @C? ?>‘ =? ‘ I C F‘ AC‘ E@= F‘ AC‘ F@‘ = @‘ A1‘ =? ‘ E@= F‘ ;‘ AC‘

N-d‘ & 1 ‘ J =<@ ‘ =? ‘ 1= @‘ @C 1 = @‘ AC‘ E@ =C= A?‘ ?E@C AC‘ 1AC‘ F@‘ D CDA @ ‘ A1‘ F ‘ ‘ AC‘ 1AC>@ ‘ AC‘ 1= 1 @ ‘ =? ‘ F‘ @C 1 = @‘ AC‘ E@ =C= A?‘ 'AC‘ =? ‘ ACE@C‘ ?E@C‘ F ‘ ‘ AC‘ <?AG ?>‘ =? ‘ F‘ @C 1 = @‘ E@ =C= A?‘ AC‘ ACE@C‘ A‘ I@‘ 1= @‘ AC‘ 1AC>@ ‘ @ ‘ F@‘ = J @‘ = ‘ C @‘ AC‘ > B@ ‘ AC‘ @?E ‘ F@‘ = J @‘ = ‘ C @‘ A‘ =? ‘ D@C A?‘ ;‘ AC‘ ;

N d‘ & 1 ‘ J =<@ ‘ > B@ ‘ AC‘ @ ‘ =? ‘ 1= @‘ = @ J @? ‘ AC‘ C@T DC@ @? = A?‘ = ‘ A‘ =‘ F E‘ FAC?‘ = B@‘ F=B ?>‘ I@@?‘ ‘ IAC?‘ AC‘ = ‘ A‘ F@‘ IAE ‘ A1‘ =‘ E@ @= @E‘ D@C A?‘ AC‘ =‘ ‘ IAC?‘ F E‘ ?‘ =? ‘ A11 ?‘ AC‘ 1= @ ‘ DC@ @?E ?= ;'=? ‘ F E‘ IAC?‘ = B@‘ X&=‘ ‘ IAC?‘ ;‘ AC‘

N:d‘ * =<@ ‘ =? ‘ 1= @‘ = @ J @? ‘ G I‘ ? @? ‘ A‘ I=B@‘ F@‘ = J @ @? @C@E‘ ?‘ =? ‘C@> @C‘ A1‘ I C F ‘ AC‘ E@= F ‘ ‘;

F= ‘ 1AC‘ @= F‘ A11@? @‘ I@‘ =I @‘ A?‘ J J =C ‘ A?‘ 1 A?‘ A‘ =‘ D@?= ‘ ?A ‘ @] @@E ?>‘ @?‘ DA ?E ‘ =?E‘ A?‘ A?B A?‘ A?‘ ?E J @? ‘ A‘ 1 ?@‘ AC‘ A‘ J DC A? J @? ‘ G F‘ AC‘ G FA ‘ F=CE‘ =I A C‘ 1AC‘ =‘ @C J ‘ ?A ‘ @] @@E ?>‘ GA‘ @=C ‘ AC‘ A‘ D@?= ‘ bCB E@‘ 1AC‘ =‘ @C J ‘ ?A ‘ @] @@E ?>‘ @B@?‘ @=C

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9/(/‘ +‘ 12<‘ 4 =4+4/ :‘ 49+4‘ +‘ 1*/()#[‘ ; +‘ '‘ 9+ :‘ =2*/ ; ' a/ :‘ +‘ ; +((+)/‘ 3/P 47 / /‘ '‘ 49/‘ "(=2 ' /(+ ' :‘ ‘ L ‘ +' :‘ 49+4‘ 0+&4/(‘ 49/‘ =2P */ ; ' a+4 2 '‘ 2& 49/‘ =+ :‘ ; +(P (+)/‘ 49/‘ "(P =2 ' /(; +: /‘ 1/(4+ -'‘ &+*=/‘ =4+4/ ; / '4‘ &2(‘ 49/‘ "<("2=/

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4 ; +4/*#‘ 12 ' '/14/ :‘ 7 49‘ 1+<= ')‘ &+*=/‘ / '4(/=‘ 42‘ 9/‘ +14<+**#‘ ; +: /‘ '‘ (/) =4/(=‘ L2(‘ 49/‘ "<' =9 ; / '4 ‘ =/‘ J2* ‘ H‘ * 5

&' '' "<(=<P +'1/ 2& +³ &+*=/ =4 - / ; / ' 4 3# 49/ "(=2' /(43/ "+(4 1<*+(= +(/ /'4)(/ :' '' 49/ (/) =4/(' 49/ 2&&/ '1/ = &/*2'#

F@' DC A?@C' G=' ?E @E' ?E@C' F@' ' ,' .' & ' :'' 9 '' 1AC' 1@ A? A ' = ?>' A' I@' C@> @C@E' ?' F@' C@> @C' A1' E@= F ' A1' F@' IACA >F' A1' & ' =' 1= @' @? C ' A1' F@' E@= F' A1' ' AE A?' F@' DC A?@C' GA E' F=B@' I@@?' @? @E' A' ' A?' F@' E@= F' A ' ' AE A?' 1' F@' E 'E' ?E@C' F@' =>@' A1' G@? A?@' ;' =?E' ?' ACE@C' A' AI = ?' F@' JA?@ '' =?E' D@C =E@' 1F@' C @@' A1' =' DCAD@C ' F=' ' AE A?' G=' E@=E'' GF@?' ?' 1= ' F@' G=' ?A '' F@' G@?' =?E' E@ C@E' F@' C@> C=C' =' & ' A' C@> @C' F@' E@= F' A1' ' AE A?'' GFA'' F@' = E'' F=E' E @E' ?' F@C' DC@ @? @'' =?E' F@' >=B@' F J' F@' D=C =C '' GF F' F@' @? @C@E' ?' F@ C@> @C' 1CA ' F@C' E = A?'' =?E' F@' >?@E' F@' C@> @C' G F' F@C' J =C< ' F@' C @@' D= E' F@C' F@' ' A?' F@' @C 1 = @' A1' F@' C@> @C' GF F' G=' F@G?' F J'' =?E' F=E' A' D=' F@' = J A ? ' =>= ?' A' D ' =4# 4K' GFA' G=' = B@' C@ G@ '' '' F@ E' F=' ' G=' =' * 4 '' G F ?' F@' ' ' ' ! ' ' ' 9 '' ' : '' A' DCA C@' =' 1= @' @? C ' ?' =' " 2! '" ?' F@' &6 '" GF F' F=E' I@@?' DCAB@E' F@C@'' 1&3

04' GF@C@' F@' DC A?@C' G=' ?E @E' ?E@C' F@' ' ,' .' & ' :'' 9 '' 1AC' F=B ?>' 1@ A? A ' = @E' =' 1= @' @? C ' A1' =' I C F' A' I@' J =E@' ?' F@' C@> @C' A1' F@' I C F ' A1' ' @ J @? ' # =?@ '' F@' DC T A?@C' G@?' A' * C' A?@ '' F@' C@> C=C' A1' I C F ' 1AC' ' @ J @? H' D=C F'' =?E' = <@E' F J' A' C@> @C' F@' I C F' A1' =' F E'' GF F' F@' = E' &=' F@C' AG?'' =?E' F@' = @E' F=' F@' G=' F@' G 1@' A1' & ' # = @ '' A1' " A' ' F D' =CE'' =?E' F=' F@' F E' G=' IAC?' A?' F@' ' A1' " AB@ J I@C'' 9: ' * C' A?@ ' = A?@E' F@C' =' A' F@' ?@ @ T ' A1' J =< ?>' =' C @' = @ J @? ' ?' F@' J = @C'' =?E'' =' F@' D@CT @E' ?' F@' C F' A1' F@C' = @ J @? '' F@' J =E@' 111@ AZ> C ' = ACE ?>' A' '' =?E' F@' >?@E' F@' @? C ' =' F@' D C A?' > B ?>' F@' ?1AC J = A?;' ' F@' @? C ' G=' 1= @' ?' @B@C ' D=C =C' ;' =?E' ' G=' F@ E' F=' F@' DC A?@C' G=' > ' A1' 1@ A? ' G F ?' F@' ' ,' .' & ' :'' 9 '' ' : '' GF F' J =E@' ' =' 1@ A? ' A' 7 = @' A' I@' ? @C @E' ?' =? ' C@> @C' IAA<' H 7 =? '1= @' @? C ' A1' =? ' I C F' ;' H =?E' F=' ' F@' G=' FA ' J @C@ ' > ' A1' F@' J E@ J @=?AC' ?E@C' @ ' : ' A1' F@' =J @' '' A1' G T 1 ' J =< ?>' =' 1= @' = @ J @? ' 1AC' F@' D CDA @' A1' ' I @ ?>' ? @C @E' ?' =? ' C@> @C' A1' I C F'' 1 3

' 12<' 4 &2(7 *&<**# : /P =4(2# ')' +' :' 'P &+1 ')' +' :' 'P 6<(')' +' (/) =4/(' =')22: 9+4 =' 'P 6<(')' 2(: /P &+1 ')' +' (/P) =4/(^

B' A ? ' = @>@E' F=' F@' DC A?@C' 1@ A? A ' =?E' G 1 ' E E' E@ CA '' E@1= @'' =?E' ?Z C@' =' @C = ?' C@> @C' A1' F@' I=D J '' J =CT C =>@ '' =?E' I C = ' ?' ' F@'DC A?@C' = @E' A' @=C F' F@'C@> @C'' =?E' GF ' F@' C= @' G=' AA< ?>' ? A' =' F@ ' 1AC' =?A F@C' IAA<'' =?E' F=E' F ' I= <' C?@E'' F@' DC A?@C' AC@' A11' F@' AG@C' DAC A?' A1' A?@' A1' F@' @=B@ ' A1' F@' C@> @C;' F@' D=C ' A1' F@' @=1' G=' AC?' A11' =?E' @? C@ ' @D=C= @E' 1CA J ' F@' C@ E @ ' F@' D=C ' AC?' A11' A? = ?@E' 1 B@' @? C@' @? C @ '' =?E' F@' GFA @' A1' F@' @? C

2&' 49/' ; 249/ ($ 9/' 9+:' 1+<=/ :' 42' 9/' / '4/ (/ :'0' 2"9 +³ 24 ' /' &2(; / (*# 23 '=' $ +' :' 4' 7+=³ +**/) / :' 49+4' 49/' / '4(# 7+=³ &+*=/ ' +=³ 9/' 0' / 7' 9 =' & (=4' 7 &/' +=³ +* J/' +4' 49/' 4 ; /' 9/' ; +: /' 4 ' 4' 7+=³ 236/14/ :' 49+4' 49/' 14' :6 :' "24' (/T< (/' +' ; +' ' 42' =4+4/' 79/49/(' 2('24' 9/' 7+=³ ; +((/ :' 42' 49/' ; 249/(' 2& 49/' 19 *: ' ' '+ ; /' ;)94' 3/')+ ' / :' 3# (/"<4+4 2' ' +' :' 49/' 14' ;)94' +" "*# 42' +' 72 ; +' S=' '+ ; /')+ ' / :' 3#' (/"<4+4 2' ' 4' 7+=³ '24' 12' & ' / :' 42' */) 4 ; +4/' 19 *: (/ ' ' L2(' 49/' (27 '' 4' 7+=³ 12' 4/ ' : / :' 49+4' 49/' 724 :=' 0' '+ ; /' +' :' ; + : /'' =<('+ ; /' 2& 49/' ; 249/ ($; <=4 ; /+'' =<('+ ; /' 3/&2(/' 3/ ')' 19+') / :' 9# ; +((+) /? 3<4' '2' 2" ' 2'' 7+=³ /V" (/=/ :' 2'' 49/' "2 '4' '249/(' "2 '4' 4+0/'' '' 49 =³ 42 :' 49/' "(/1/ : ')' 1+=/' 7+=³ 49+4' 49/' "(2=/1<4 2'' ; <=4' 3/' 12 ; ; / '1/ :' 7 49 '' 49(/ /' #/+(=³ +&4/(' 49/' 2& / '1/' 12 ; ; 44/ :' ? '' ' 49/' "(/1/ : ')' 1+=/' 2(:' + ; "3/*# */4' 49/' 1+=/' "(21// : ' +' :' '' 49 =³ 1+=/' 49/' "2 '4' 72 *: ' 9+J/' 3/ / '' (/=/(J/ :' 42) /49/(' 7 49' 49/' 249/(

" B /) ' +=2'' G' ' ' ' YGG " B /) ' ' /7 44' G' ! ' ' ' NMA' (/==72**' ' +&4/(' 12' =<*4 ')' *: /(=2'

A1' 6' J =CC =>@' @] @D ' 7 A I@C' : F% .: %H =?E' F@' DC A?@C' F=E% A I = ?@E' = @ ' A' F@' C@> C ' A1' F@' FAD' A1' & AC @ @C% =?E' = @C@E' F@' C=? ! D ' F@C@' E@DA @E' I ' I ?>' =' 1 T A ' J =CC =>@' A?' F@' = E' : F' A1' A I@C' 1AC' F@' C@= ' @? C % =?E' F@' AIZ@ ' A1' F@' DC A?@C' G= ' F= ' F ' '=? C D ' FA E' I@ AJ@' >AAER @1 A?E=C ' @B E@? @' A1' F@' 1 A ' J =CC =>@' A?' F@' E@ C A?' A1' F@' C@> @C z' NAd F@' C= @' J J @E = @ ' E@ @ @E' F@' DC A?@C ' F@' E@1@? @' G= ' F= ' ' G= ' AC?' I ' = E@? ;' I ' F@ Z C ' 1A ?E' F= ' ' G= ' EA?@' GE 1 ' ' G= ' AIZ@ @E ` % F= ' F ' G= ' ?@ F@C' =' E@ CA ?>% E@1= ?>% AC' ?Z C ?>' G F ?' F@' J @=? ?>' A1' F@' %4' = ' F@' C@> @C' GF@?' DCAE @E' F=E' F@' AC?' D @ @' D= @E' A' F@' C@ E @' A1' F@' @=1% =?E' G= ' = ' @> I @' 60' I@1AC@;' I ' ?E= % ' % FA >F ' F= ' = ' F@' J @' ' G= ' = = ' AC?' A11' =?E' @D=C= @E% F@' C@> @C' G= ' E@T 1= @E% AC' = ' = ' @B@? ' ?Z C@E% G F ?' F@' J @=? ?>' A1' F@' = @ ' -?E% F= ' F@' ?E J @? ' G= ' I=E% = ' ' = @E' FC@@' E ? ' A11@? @ ` F@' E@ CA ?>% E@1= ?>% =?E' ?Z C ?>' F@' C@> @C;' I ' ?E= % ' % FA >F ' F= % F@' =?> =>@' A1' F@' = @' F=B ?>' I@@?' 1A AG@E% ' G= ' ? ' IZ@ A?' F= ' F@' A11@? @ ' G@C@' F=C>@E' J = B@ % FA >F' A?@' A? ' G= ' DCAB@E% 1E3' = % F= ' F@' ?E J@? ' A >F ' A' F=B@' F=C>@E' F= ' F@' A11@? @' G= ' A J J @E' ! "G' I ' ?E= % ' % FA >F ' F= ' G= ' J D @E' 1CA J' F@' ?= C@' A1' F@' A11@? @' F=C>@E ' ?E% A?' =' = @' C@ @CB@E% ' G= ' F@ E' F= ' = ' F= ' F=E' I@@?' EA?@' G= ' D@C1@ ' C >F ' A?' = ' F@' DA ? % N>d

& @' F=B@' '@ ' F= ' 1' =' J =?' >=B@' =' 1AC>@E' @C 1 = @' A1' =' 44/(')'+' J =CC =>@' A' F@' DC@ @?E@E' G 1@' ?' ACE@C' F= ' F@' J >F ' F@G' ' A' &2()/ :' 1/(4 P F@C' 1= F@C% F@' J =?' GJ ' ?A ' > ' A1' =?' @C ?>' G F ?' F@' & 1+4/ ' :% ' % ' - ' NCd

F@' ' ,' D' & * ' :% ' 98% @? @E%!' 7 ?' ' 1AC' J =CC =>@ ' ?' Y' ' D' **' I ' ?> =?E%H I ' @ ' 99' @?= % F= ' !' @B@C ' D@C A?' GFA' F= ' <?AGT 1' EA' =' HE' ?> ' =?E' G 1 ' J =<@' =? ' 1= @' E@ =C= A?' AC' >?' =? ' 1= @')' ')' &+*=/' '24 1/-' +' .' ?A @' AC' @C 1 = @' C@b C@E' I ' F ' % 1AC' F@' D CDA @' A1' 1/(4 & 1+4/-' &2(' DCA C ?>' =? ' J =CC =>@% =?E' @B@C ' D@C A?' GFA' F= ' 1ACI E' F@' ;+((+)/ @' A1' =? ' D@C ? @?E@? ' C@> C=CH ' @C 1 = @' I ' 1= @ ' C@DC@T @? ?>' F J @ 1' AC' F@C @ 1' A' I@' =' D@C A?' GFA @' A? @? ' A' F' J =CC =>@' ' C@b C@E' I ' =G% <?AG ?>' F' C@DC@ @? = A?' A' I@' 1= @% F= ' 11@C' F@' D@?= @ ' A1' D@CZ C H N d

F@' ' ,' :' 3 @ ' ' -% @? @E% 7 ?' ' 1AC' @?=I ?>' A C ' A1' L2() ')' (/P Z @' A' =E J ' ?A? D=CA F = ' C@> @CH ' = ' @B E@? @' A1' I C F % AC') =4/(-' : /"2P I=D J % E@= F % AC' I C = % =?E' J =CC =>@ %H I ' @ ' 9' @?= % F= ' = 4/ :' < ' : /(!' @B@C ' D@C A?' GFA' F= ' G 1 ' E@ CA ' AC' ?Z C@% AC' = @' A' 1@@ 49/' H' ' I' /4' 1' NG E@ CA @E' AC' ?Z C@E% =? ' C@> @C' AC' C@ ACE' A1' I C F' AC' I=D J % Y?=J ?>% AC' E@E = A?% E@= F' AC' I C = % AC' J =CC =>@% GF F' F= ' I@' 'E@DA @E' G F' F@' C@> C=C >@?@C= ' I ' B C @' A1' F ' % AC' =? ' D=C ' F@C@A1% AC' F= ' 1= @ ' J =<@' AC' A ? @C1@ % AC' = @' A' I@' 1= @ ' J =E@' AC' A ? @C1@ @E% =? ' D=C ' A1' =? ' F' C@> @C' AC' C@ ACE% AC' F= ' G 1 ' ? @C ' AC' = @' A' I@' ? @C @E' ?' =? ' A1

W2% 9/' =4+4/ ; /' 4 3/47 / /'' 3(+10/4-' -' &(2 :' ' ' AM. ' 3<4 7+-' 24 12 '4+ '/ :' ' 49/' 1+=/' =<3 ; 44/ :' 42' 49/' 6<:)/= " B' L<**/ (S-' 1+=/') /+19' N.Y ' W% , /) ' ' 27/' ' :' /' ' ' GG ' . AM. " B' /)' ' /#722 : ' G' ' ' ' HAG?

" B' L2(' 49 -' "<' =9 ; /' 4' =/ /' * 5.' J2*' H' 9/' H' ' I' /4' 1' DG' =' I' 12 'P 4+ '-' +' = ; *+(' "(2J = 2 '' +)+ '=4' &+*=/' : /1*+(+4 2 '-' ; +: /' 42' "(21<(/' +' ; +((+)/ 2<4' 2&' +' : =4(14? +' :' .N ' GM' /4' 1' . .N ' ==' G' ' .E' 12 '4+ '-' = ; *+(' "(2P J = 2 '-' 42' 49/' Y' ' D' **' I' 1' EY' =' HE

F C@> @C AC C@ ACE =? 1= @ @? C A1 =? I C F AC I=D J ?=J ?>% AC E@E = A?% E@= F% AC I C = % AC J =CC =>@% AC F= G 1 > B@ =? 1= @ @C 1 = @% AC F= @C 1 =? GC ?> A I@ =?@] C= 1CA J =? C@> @C AC C@ ACE A I@ 1= @ ?= =? D=C F@C@A1% AC F= 1AC>@ AC A ? @C1@ F@ @= A1 F@ F E A1 @% F1 I@ > A1 1@ A? H 1 3

F@ = @ = FAC K ?> >AB@C?J @? A C= @ J A?@ I G= A1 =?? @ % = A? = ?' = @ J =< ?> =1@ A? A 1AC>@% , % =? C@> @C% @C 1 = @' =11 E=B % , 4 F@C@ ?' J @? A?@E% AC A' D@C A?= @ =? C @ ?A J ?@@

.M ! /2' I 1' GI =' I. L2() ')' (/) =P 4/(=' 1/(4 & P 1+4/=' 4(+' =P &/(=' 2&+' ' < P 4 /=' 1)(+'4/ :' 3# 49/ 12 ; ; =P = 2' /(=' &2(' 49/ (/ :<14 2 '' 2& 49/ ''+4 2'+ :/34

F@ @A :% - :% @? @E% 7 ?' A @?=I @ F@ A J J T A?@C 1AC F@ C@E A?' A1 F@ ?= A?= E@ I A >C=? 1@ =?? @ % =?E' =?? @ 1AC @C J A1 @=C %H I @ : @?= % F= ! 1' =? D@C A?' AC D@C A? F= 1AC>@% A ? @C1@ % AC = @C% AC F= = @ AC DCA C@ A I@ 1AC>@E% A ? @C1@ @E% AC = @C@E% AC F= <?AG ?> AC GE 1 = AC = ?' F@ 1AC> ?>% A ? @C1@ ?>% AC = @C ?>% =? C@> @C AC C@> @C A1 F@ I C F% AC I J J % AC E@= F% AC I C = % A1 =? D@C A?' AC D@C A? A I@ =DDA ? @E' =' ?A J ?@@ AC ?A J ?@@ ?E@C F@ DCAB A? A1 F % AC =? AD AC @C 1 = @ A1 =? % F C@> @C% AC F@ ?= J @ AC ?= J @ A1 =? G ?@ AC 5! 4 =? F @C 1 = @% AC =? =1 E=B AC =11 CJ = A?' C@b C@E 1A I@ =<@?' 1AC =? A1 F@ D CDA @ A1 F % AC =? @C 1 = @ A1 =? Z @ A1 F@ D@= @ AC J => C= @% AC A1 =? A11 @C = ?>' ?E@C F@ = E AJ J A?@C 1AC F@ C@E A?' A1 F@ ?= A?= E@I % A1 =? F =11 E=B AC =11 CJ = A?' F=B ?>' I@@?' = ' ? : a@1AC@' F J % AC =? @C 1 = @ A1 =? >AB@C?AC AC D@C A?' = ?>' = F% AC J ? @C% AC A? % AC F @1 J => C= @ A1 =? DCAB ? @% AG?% AC D = @% AC A F@C D@C A?' = FAC K@E I F A >C=? =? @C 1 = @ A1 F@ 1@ AC E@= F A1 =? ?AJ ?@@ ; AC F= 1AC>@% A ? @C1@ % AC = @C% AC F= = @ AC DCA C@ A I@ 1AC>@E% A ? @C1@ @E% AC = @C@E% AC F= <?AG ?> AC G 1 = AC = ?' F@ 1AC> ?>% A ? @CT 1@ ?>% AC = @C ?>% =? @C 1 = @ AC @C 1 = @ A1 =? A11 @C A1 F@ AJ J A?@C 1AC F@ C@E A?' A1 F@ ?= A?= E@I % AC A1 =? = F @C AC @C<' A1 F@ =?<' A1 ?> =?E% AC '@ ?= J @ AC ?= J @ A1 =? D@C A?' AC D@C A? ?' AC A =? C=? 1@C A1 =? I=?<' =?? @ AC A?>' =?? @ % AC ?' AC A =? @C 1 = @ AC A F@C ? C J @?' 1AC F@ D= J @?' A1 JA?@ 1AC F@ D C F= @ A1 =? =?? ?E@C F@ DCAB A? A1 F % AC ?' AC A =? C=? 1@C AC = @D =? @ A1 =? F =?? ?' F@ IAA< A1 F@ >AB@C?AC =?E' AJ D=? A1 F@ =?<' A1 ?> =?E% AC ?' AC A =? C@ @ D AC E F=C>@ 1AC =? F =?? % AC ?' AC A =? C@ @ D AC E F=C>@ 1AC =? D= T J @?' AC D= J @?' E @ AC A I@ AJ @ E @ F@C@A?% AC ?' AC A =? @ @C A1 = AC?@ AC A F@C = FAC AC ? C J @?' A' = FAC K@% AC D CDAC ?>' A' = FAC K@% F@ C=? 1@C AC = @D =? @ A1 =? I=?<' =?? @ AC A?>' =?? @ % AC =? 1@ =?? ; AC =? =?? 1AC @=C A1 GF= A@B@C < ?E% ?E@C F@ DCAB A? A1 F % AC = FAC K ?>' AC D CDAC ?>' A' = FAC K@ F@ C@ @ D A1 =? 1@

W D =' 49 =' =' +' &/*2 '# &2(' 79 19 49/ H I /4 1 NG "(2J :/= '2 /V"(/=' "<' =9 ; / '4 49/ "(1 "+*=' +(/ "<' =9P +3*/ <' :/(' 49/ D E ! /2 I 1 GE ==' E N +' :' 49/ :' /4 1 NM =' A' J2*' .' "' YA' +' :' 49/ +11/==2(/=' +(/ "<' =9+3*/ <' :/(' 49/ GI ' GA' /4' 1' NI' J2*' .' "' .DI ' O' 9/ G.' GG /4' 1' GA' =' H' /V4/ ' :=' 49/ H I /4' 1' NG' =' E 1 ' 42' (/) =4/(=' :/"2= 4/ :' <' :/(' 49/ G.' GG /4' 1' GA' "' 49/ ! / '/(+# /) =4/(' && 1/

ʻ VVV V ɗ ʻ .ʻ ʻ@ ʻ E.H

=?? ʻ EC ʻ =? ʻ =?? ʻ 1AC ʻ @=C ʻ A1ʻ GF= A@B@C ʻ < ?E ʻ >C=? @E ʻ
?E@C ʻ F ʻ ʻ AC ʻ =? ʻD= J@? ʻ AC ʻ D= J@? ʻ E @ʻ AC ʻ Aʻ I@ AJ@ʻ
E @ʻ F@C@A?;ʻ AC ʻ 1ʻ =? ʻD@C A?ʻ AC ʻ D@C A? ʻ F= ʻ G 1 ʻ 1= @ ʻ
=?ELE@ @ 1 ʻD@C A?= @ʻ =? ʻ C @ʻ =?Eʻ C@= ʻ?AJ ?@@ʻ AC ʻ?AJ ?@@ ʻ
AC ʻ F= ʻ G 1 ʻ @C ʻ AC ʻ E@ B@C ʻ AC ʻ DCAE @ʻ Aʻ =? ʻ D@C A?ʻ AC ʻ
D@C A? ʻ = ?>ʻ ? E@C ʻ F@ʻ = 1AC ʻ A1ʻ F ʻ ʻ =? ʻ Fʻ 1AC>@Eʻ
C@> @C ʻ AC ʻ AD ʻA1ʻC@> @C ʻ AC ʻ=? ʻ Fʻ 1AC>@Eʻ @C 1 = @ ʻ =11 E=B ʻ
AC ʻ =11 CJ= A? ʻ <?AG ?>ʻ F@ʻ =J @ʻ Aʻ I@ʻ 1AC>@E ʻ A ? @C1@ @E ʻ AC ʻ
= @C@E ʻ G Fʻ ? @? ʻ Aʻ E@1C= Eʻ F ʻ * =Z@ ʻ F ʻ F@ C ʻ=?Eʻ @ AC ʻ
AC ʻ G Fʻ ? @? ʻ 11ʻ E@1C= Eʻ =? ʻD@C A?ʻ AC ʻ D@C A? ʻ GFAJ A@B@C ʻ F@?ʻ
=?Eʻ ?ʻ @B@C ʻ Fʻ = @ʻ = ʻ =?Eʻ @B@C ʻD@C A? ʻ =?Eʻ D@C A?ʻ Aʻ A11@?ET
?>ʻ =?Eʻ I@ ?>ʻ =G1 ʻ A?B @Eʻ F@C@A1 ʻ F= ʻ I@ʻ =EZ E>@Eʻ > ʻ
A1ʻ1@ A? ʻ =C Eʻ F11 ʻ 11@C E@= F H 7>3

F@ʻ -ʻ ,ʻ ʻ & ʻ :ʻ ʻ 8 ʻ @? @E ʻ 7 ?ʻ ʻ Aʻ C=? 1@C ʻ F@ʻ ʻ ,ʻ ʻ & ʻ :ʻ
J =?=>@ J @? ʻ A1ʻ @C = ?ʻ =?? @ ʻ A?ʻ B@ ʻ 1CA J ʻ F@ʻ C@ @ D ʻ A1ʻ F ʻ 1ʻ AN ʻ ʻ .N ʻ
* =Z@ H ʻ @] F@b @C Aʻ F@ʻ J =?=>@ J @? ʻ A1ʻ F@ʻ AJ J A?@C ʻ 1AC ʻ '=' A? '!
F@ʻ C@E A?ʻ A1ʻ F@ʻ ?= A?= ʻ E@I ¼H , ʻ I ʻ @ ʻ ʻ @?= ʻ F= ʻ 1/(4 & 1+4/=
7 1ʻ =? ʻD@C A?ʻ AC ʻ D@C A? ʻ F= ʻ 1AC>@ʻ A ? @C1@ ʻ AC ʻ = @C ʻ AC ʻ F= ʻ 4(+'=&/(=ʻ A1ʻ
= @ʻ AC ʻ DCA C@ʻ Aʻ I@ʻ AC>@E ʻ A ? @C1@ @E ʻ AC ʻ = @C@E ʻ AC ʻ F= ʻ
<?AG ?> ʻ AC ʻ G 1 ʻ= ʻ AC ʻ = ʻ ?ʻ F@ʻ 1AC> ?>ʻ A ? @C1@ ?>ʻ
AC ʻ = @C ?>ʻ =? ʻ E@ =C= A?ʻ G=CC=? ʻ ACE@C ʻ AC ʻ A F@C ʻ ? C J@? ʻ
AC ʻ =? ʻ=11 E=B ʻ AC ʻ =11 CJ= A?ʻ C@b C@Eʻ Aʻ I@ʻ J =E@ʻ I ʻ F ʻ ʻ
AC ʻ I ʻ F@ʻ AJ J A?@C ʻ 1AC ʻ F@ʻ C@E A?ʻ A1ʻ F@ʻ ?= A?= ʻ E@I ʻ
?E@C ʻ =? ʻ A1ʻ F@ʻ DCAB A? ʻ A1ʻ F ʻ ʻ AC ʻ ?E@C ʻ =? ʻ = FAC ʻ
> B@?ʻ Aʻ F@ J ʻ 1AC ʻ F= ʻ D CDA @;ʻ AC ʻ F= ʻ 1AC>@ʻ A ? @C1@ ʻ AC ʻ
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= @C@E ʻ AC ʻ F= ʻ <?AG ?> ʻ AC ʻ G 1 ʻ= ʻ AC ʻ = ʻ ?ʻ F@ʻ 1AC> ?>ʻ
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?= J@ʻ AC ʻ ?= J@ ʻ A1ʻ =? ʻ D@C A?ʻ AC ʻ D@C A? ʻ ?ʻ AC ʻ AL=? ʻ C=? 1@C ʻ A1ʻ
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AC ʻ = @D =? @ʻ A1ʻ =? ʻ Fʻ =?? ʻ ?ʻ F@ʻ IAA< ʻ A1ʻ F@ʻ AJ J T
A?@C ʻ 1AC ʻ F@ʻ C@E A?ʻ A1ʻ F@ʻ ?= A?= ʻ E@I ʻ AC ʻ ?ʻ AC ʻ Aʻ =? ʻ
C@ @ D ʻ AC ʻ E F=C>@ʻ 1AC ʻ =? ʻ Fʻ =?? ʻ AC ʻ ?ʻ AC ʻ Aʻ =? ʻ C@ @ D ʻ
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F@C@A?ʻ AC ʻ ?ʻ AC ʻ Aʻ =? ʻ @ @C ʻ A1ʻ = AC?@ ʻ AC ʻ A F@C ʻ = FAC ʻ AC ʻ
? C J@? ʻ Aʻ = FAC K@ʻ AC ʻ D CDAC ?>ʻ Aʻ = FAC K@ʻ F@ʻ H=? 1@C ʻ AC ʻ
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ʻ AC ʻ F ʻ ʻ AC ʻ =? ʻD= J@? ʻ AC ʻ D= J@? ʻ E @ʻ AC ʻ Aʻ I@ AJ@ʻ E @ʻ
F@C@A?;ʻ AC ʻ 1ʻ =? ʻ D@C A?ʻ AC ʻ D@C A? F= ʻ G 1 ʻ 1= @ ʻ =?Eʻ
E@ @ 1 ʻD@C A?= @ʻ =? ʻ C @ʻ =?Eʻ C@= ʻ ?AJ ?@@ʻ AC ʻ ?AJ ?@@ ʻ AC ʻ
F= ʻG 1 ʻ @C ʻ AC ʻ E@ B@C ʻ AC ʻ DCAE @ʻ Aʻ =? ʻD@C A?ʻ AC ʻ D@C A? ʻ
= ?>ʻ ?E@C ʻ F@ʻ = FAC ʻA1ʻ F ʻ ʻ =? ʻ1AC>@Eʻ C@> @C ʻ AC ʻ AD ʻ
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+14 ; /'4ʻ +"'"/+(ʻ 42ʻ 3/ʻ =<"/(=/ :ʻ 3# 49/ʻ <' : /(ʻ 49/ʻ GIʻ ʻ GAʻ /4' 1' NE' =' IE'
GIʻ ʻ GAʻ 24' 1' NE' 49ʻ (/="/14 42ʻ 49/ʻ :ʻ "' G=Gʻ =ʻ 42ʻ 49/ʻ "<' =9 ; /'4ʻ &
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: /=1(3/ :ʻ '24ʻ 9+J ')ʻ 3//'" (/"/+*/ :ʻ 3# 1/==2(/=ʻ =/ʻ 49/'=+ ; /ʻ 14ʻ =/1' IN ʻ J2*' .'
49/ʻ :ʻ **' Iʻ 1' YY +' :ʻ 49+4ʻ 14ʻ '24 "' .EA
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9 :

8 ‘ ‘^ 3 5‘ ‘8 ‘ .‘ 12 3‘ J

=C= A?‘ =11 E=B ‘ AC‘ =11 CJ= A?‘ <?AG ?>‘ F@‘ =J@‘ A‘ I@‘ 1AC>@E‘ A ? @C1@ @E‘ AC‘ = @C@E‘ G F‘ ? @? ‘ A‘ E@1C= E‘ F ‘ * =Z@ ‘ F ‘ F@ C ‘ =?E‘ @ AC ‘ AC‘ G F‘ ? @? ‘ A‘ E@1C= E‘ =? ‘ D@C A?‘ AC‘ D@CT A? ‘ GFA J A@B@C;‘ F@?‘ =?E‘ ?‘ @B@C ‘ F‘ = @‘ = ‘ =?E‘ @‘@C ‘ D@C A?‘ =?E‘ D@C A? ‘ A‘ A11@?E ?>‘ =?E‘ I@ ?>‘ =G1 ‘ A?B @E‘ F@C@A1‘ F= ‘ I@‘ =EZ E>@E‘ > ‘ A111@ A? ‘ =?E‘ ‘@ ‘E@= F H 1 3

+J ‘)=$ 3+‘0‘ +‘ ‘< 4 /=

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L2()/(#‘ +=‘ 42‘ 49/‘ (/) =4(# 2& : // :=

‘ F@‘ -:‘ ,‘ -8‘ 3 @ ‘ ‘ 9‘ ‘ ‘ 7GFA A@BA ‘ F= ‘ 1AC>@‘ AC‘ 1C= E @? ‘ = @C‘ AC‘ F= ‘ A11@C‘ @C‘ E DA @‘ A1‘ AC‘ D ‘ A1‘ <?AGT ?>‘ F@‘ =J@‘ A‘ I@‘ 1AC>@E‘ AC‘ 1C= E @? ‘ = @C@E‘ =? ‘ J@JAC = ‘ =11 E=B ‘ =11 CJ= A?‘ @? C ‘ @C 1 = @‘ ?EAC @?1@? ‘ EA J@? ‘ AC‘ GC ?>‘ J =E@‘ AC‘ @E‘ ?E@C‘ F@‘ DCAB A? ‘ A1‘ =? ‘ ‘ D= @E‘ AC‘ F@C@=1 @C‘ A‘ I@‘ D= @E‘ 1AC‘ AC‘ C@ = ?>‘ A‘ F@‘ C@> C ‘ A1‘ E@@E ‘ AC‘ F= ‘ 1AC>@‘ AC‘ A ? @C1@ ‘ F@‘ @= ‘ A1‘ AC‘ I@ A?> ?>‘ A‘ =? ‘ A11 @‘ 1AC‘ F@‘ C@> C ‘ A1‘ E@@E ‘ AC‘ =? ‘ =J D‘ AC‘ J DC@ A?‘ A1‘ =? ‘ F‘ @= ‘ AC‘ F= ‘ 1AC>@‘ =? ‘ ?=J @‘ I=?EGC ?>‘ AC‘ >?= C@‘ D CDAC ?>‘ A‘ I@‘ F@‘ ?=J @‘ F=?EGC ?>‘ AC‘ >?= C@‘ E1‘ =? ‘ D@C A?‘ A‘ =? ‘ F‘ J@JAC = ‘ =11 E=B ‘ =11 CJ= A?‘ @? C ‘ @C 1 = @‘ ?EAC @J@? ‘ EA J@? ‘ AC‘ GC ?>‘ GF F‘ F= ‘ I@‘ C@b C@E‘ AC‘ E C@ @E‘ A‘ I@‘ >?@E‘ I ‘AC‘ I ‘B C @‘ A1‘ =? ‘ ‘ D= @E‘ AC‘ A‘ I@‘ D= @E‘ ACH F= ‘ A11@C‘ @C‘ E DA @‘ A1‘ AC‘ D ‘ A11‘ =? ‘ F‘ J@JAC = ‘ AC‘ A F@C‘ GC ?>‘ = ‘ ?‘ F ‘ @ A?‘ I@1AC@‘ J@? A?@E‘ F=B ?>‘ F@C@A?‘ =? ‘ F‘ 1AC>@E‘ =J D‘ AC‘ J DC@ A?‘ A1‘ =? ‘ F‘ @= ‘ C‘ =? ‘ F‘ 1AC>@E‘ ?=J @‘ F=?EGC ?>‘ AC‘ >?= C@‘ <?AG ?>‘ ' @‘ =J @‘ A‘ I@‘ 1AC>@E‘ F= ‘ I@‘ > ‘ A1‘ 1@ A? ‘ =?E‘ I@ ?>‘ A?B @E‘ F@C@A1‘ F= ‘ I@‘ =I @‘ = ‘ F@‘ E C@ A?‘ A1‘ F@‘ A C ‘ A‘ I@‘ <@D ‘ ?‘ D@?= ‘ @CB T E@‘ 1AC‘ =? ‘ @C J‘ ?A ‘ @] @@E ?>‘ 1A C @@?‘ @=C ‘ =?E‘ ?A ‘ @ ‘ F=?‘ FC@@‘ NGd @=C?% `‘ AC‘ A‘ I@‘ J DC A?@E‘ 1AC‘ =? ‘ E J‘ ?A ‘ @] @@E ?>‘ GA‘ @=C ‘ G F‘ AC‘ G FA ‘ F=CE‘ =IA C‘ =?E‘ G1 F‘ AC‘ G FA ‘ A T =C ‘ A?1 ?@J@? H 1?3

/(=2‘‘ ‘h+O‘ ‘)‘ &+*=/‘ =4+4/ ; /‘ 4 <‘ :/(‘ 49/‘ (+‘ =&/(‘ 2& +‘ :‘ 14

‘ F@‘ -8‘ ,‘ - ‘ 3 @ ‘ ‘ 8 ‘ N C=? 1@ ‘A1‘ =?E‘ d‘ ‘ 8‘ 7 1‘ ?‘ =??!‘‘ DCA @@E ?>‘ A‘ A I = ?‘ F@‘ C@> C= A?‘ A1‘=? ‘ =?E‘ AC‘ =? ‘ =?E‘ @C 1 = @‘ AC‘ @C 1 = @‘ A1‘ @‘ AC‘ A F@CG @‘ ?‘ =? ‘ C=? = A?‘ C@ = ?>‘ A‘ =?E‘ GF F‘ ‘AC‘ ‘DCADA @E‘ A‘ I@‘ D ‘ DA?‘ F@‘ C@> C ‘ =? ‘ D@C A?‘ = ?>‘ @ F@C‘ = ‘ DC ? D= ‘ AC‘ =>@? ‘ F= ‘ <?AG ?> ‘ =?E‘ G F‘ ? @? ‘ A‘ E@ @ B@‘ J =<@‘ AC‘ = ‘ AC‘ ZA ?‘ ?‘ AC‘ I@‘ DC B ‘ A‘ F@‘ J =< ?>‘ A1‘ =? ‘ ?E= @C = ‘ 1= @‘ = @ J @? ‘ AC‘ C@DC@ @? = A?‘ AC‘ DT DC@ ‘ A? @= ‘ AC‘ = ‘ AC‘ ZA ?‘ ?‘ AC‘ I@‘ DC B ‘ A‘ F@‘ DDC@ ?>‘ G FFA E ?>‘ AC‘ A? @= ?>‘ 1CA J‘ =? ‘Z E>@‘ AC‘ F@‘ C@> C=C‘ =? ‘ J = @C = ‘ EA T J @? ‘ 1= ‘ AC‘ J = @C‘ A1‘ ?1AC J = A?‘ @B@C ‘ D@C A?‘ A‘ = ?>‘ F=

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W7d 24‘ */=‘ 49+‘ ‘ & J/‘ #/+(=‘ &‘ 49/‘ 2&&/‘ 1/‘ 7+‘ 12 ; ; 44/ :‘ +&4/(‘ 49/‘ GA49‘ <*#

.EYI? =//‘ J2*‘ .‘ "‘ DH W(d 9 =‘ 1*+<=/ :=‘ &(+ ; /:‘ 2"‘ 49/‘ G ‘H ‘ ‘/‘ 1‘ I‘ =‘ .N? Y‘ ‘ ‘/‘ 1‘ HA‘ =‘ GY? +‘ :‘ E‘ !/2‘ G‘ 1‘ Y‘ =‘ H.‘ (/*+4 ‘)‘ 42‘ 2(0=9 (/‘ ? D‘ ‘ ‘/‘ 1‘ GM‘ =‘ .A‘ (/*+4 ‘)‘ 42‘ : :*/=/V ? +‘ :‘ 49/‘ Y ‘ ‘/‘ 1‘ G‘ =‘ .D W d ? E ‘ ‘/‘ 1‘ .M‘ =‘ I‘ W.b? E ‘ !/2‘ .‘ 1‘ .A‘ =‘ I‘ W.b‘ +‘ :‘ .H ‘ .I‘ /4‘ 1‘ DG‘ =‘ YG W b‘ (/*+4 ‘)‘ 42‘ (/*+‘ :

9/‘ 1*+<=/‘ =‘ ‘/7‘ ‘‘ ‘)*+‘ :‘ /V1/"4 +=‘ 42‘ : :*/=/V +‘ :‘ 2(0=9 (/‘ =‘ 42‘ 9+(:‘ *+32<(‘ :=//‘ :"‘ DHE? J2*‘ . " EM

I@' E@@ J @E' A' I@' > ' A1'=' J E@J@=?AC%' =?E' A?' A?B A1 ' F= ' I@' =I @' A' I@' JDC A?@E' 1AC' =' @CJ ' ?A ' @] @@E ?>' FC@@' @=C %' =?E' @ F@C' G F' AC' G FA ' F=CE' =IA C%' AC' A' I@' 1 ?@E' F' J ' = ' F@1 A C ' I ' GF F' F@' ' A?B @E' F= ' =G=CE';' F@' = ' AC' F ?>' EA?@' AC' AI = ?@E' I ' J @=? ' A1' F' 1C= E' AC' 1= @FAAE' F= ' I@' ? ' =?E' BA E' A' = ' ? @? ' =?E' D CDA @ %' @] @D ' = ' =>= ? ' =' D C F= @C' 1AC' B= =I @' A? E@C= A?' G FA ' ?A @ H 7'3

@ ' 9 ' 7 1'=? D@C A?' 1C= E @? 'DCA C@ %' = ' ?' 1C= E T C=?E @= ' @? 'DCA C ?>%' AC' 'DC B ' A' F@' 1C= E @? ' DCA C@ J @? ' A1' =? ' ACE@C' A1' F@' 1 C ' A1' F= (Z@C ' ?' C@ = A?' A' C@> @C@E' =?E%' AC' 1C= E @? 'DCA C@ %' = ' ?' 1C= E @? 'DCA C ?>%' AC' 'DC B ' A' F@' 1C= E @? ' DCA C@ J @? ' A1' F@' @? C ' A?' F@' C@> @C' A1' =? ' =B@= ' AC' ?A @' E1'=' F=C>@%' AC' A1' F@' @C= C@' 1CA J ' F@' C@> @C' AC' = @C= A?' A?' F@' C@> @C' A1' =? ' =B@= ' AC' ?A @' A1'=' F=C>@%' F' D@C A?' F= ' I@' E@@ J @E' A' I@' > ' A1'=' J E@J@=?AC';' =?E'=? ' ACE@C' DCA C@E' I ' 1C= E%' =?E' =? ' = ' A? @b @? ' A?' F' ACE@C%' =?E' =? ' @? C %' @C= C@%' AC' = @C= A?' A' J =E@' I ' 1C= E%' F= ' I@' BA E' = ' I@ G@@?' = ' D=C @ ' AC' DC B @ ' A' F' 1C= E H

@ ' ' 7 ? ' D@C AC ' A?B @E' A1' =' J E@J@=?AC' ?E@C' F@' +' =9 </ '4 = ' DC@ @E ?>' @ A?' F= ' I@' =I @' A' JDC A?J@? ' 1AC'=? ' @CJ ' ?A ' @] @@E ?>' FC@@' @=C %' G F' AC' G FA ' F=CE' =IA C%' AC' A' I ' 1 ?@E' F' J ' = ' F@' A C ' I ' GF F' F@' ' A?B @E' F= ' F ?<' Z H

' F@' - ' ,' - ' 3 @ ' ' .' N# @ =C= A?' A1' @' d%' ' : : %' 7 1' +O ')'&+*=/' ?' F@' A C @' A1' =? ' DCA @@E ?>' I@1AC@' F@' A C ' ?E@C' F ' %' =4+4/ ; / '4 +' :' =? ' D@C A?' =@Z' D '' @ F@C'= ' DC ? D= ' AC' =>@? ' F= %' <?AG ?> ' =?E' =<"" (/== 2 '' 2&' G F' ? @? ' A' E@ @ B@%' J =<@' AC' = ' AC' ZA ?' ?' AC' I@' DC B ' A' F@' :// :-' +' :' J =< ?>' A1' =? ' J = @C = ' 1= @' = @ J @? ' AC' C@DC@ @? = A?%' AC' DT /J : / '1/' <' : /(49/' /P DC@ %' A? @= %' AC' = ' AC' ZA ?' ?' AC' I@' DC B ' A' F@' DDC@ ?>%' 1*+(+4 2 '' 2(G FFA E ?>%' AC' A? @= ?>' 1CA J ' F@' A C ' =? ' J = @C = ' EA J @? %' 4*/' 14 1= %' AC' J = @C' A1' ?1AC J = A?%' @B@C ' D@C A?' A' = ?>' F= ' I@' E@@ J @E' A' I@' > ' A1'=' J E@J@=?AC%' =?E' A?' A?B A?' F= ' I@' =I @' A' I@' JDC A?@E' 1AC' L' @CJ ' ?A ' @] @@E ?>' FC@@' @=C %' =?E' @ F@C' G F' AC' G FA ' F=CE' =IA C%' AC' A' I@' 1 ?@E' F' J ' = ' F@' A C ' I ' GF F' F@' ' ' A?B @E' F= ' =G=CE';' F@' ACE@C' AC' E@ =C=T A?' A1' @' AI = ?@E' I ' J @=? ' A1' F' 1C= E' AC' 1= @FAAE' F= ' I@' ? ' =?E' BA E' 1AC' AC' =>= ? ' = ' D@C A? ' A F@C' F=?' =' D C F= @C' 1AC' B= =I @' A? E@C= A?' G FA ' ?A @ H

@ ' :8 ' 7 1' ?' F@' A C @' A1' =? ' DCA @@E ?>' I@1AC@' F@' A C ' L(+<:<*/ '4 +*P ?E@C' F ' ' =? 'D@C A?' F= ' 1C= E @? ' 1AC>@' AC' = @C' AC' = ' 4/(+4 2 '=' 1 ' ?' 1AC> ?>' AC' = @C ?>' =? ' @C 1 = @' AC' A F@C' EA J @? ' C@ = ?>' A' 2& 1/(4 & 1+4/=' F' =?E' AC' A' F@' @' F@C@A1%' AC' F= ' 1C= E @? ' A11@C%' @C%' <' : /(49+4' 14 E DA @' A1%' AC' D ' A11'=? ' F' @C 1 = @' AC' A F@C' EA J @? %' <?AGT ?>' F@' =J @' A' I@' 1AC>@E' AC' = @C@E%' F' D@C A?' F= ' I@' > ' A1' 1@ A? %' =?E' DA?' A?B A?' F= ' I@' =I @%' = ' F@' E C@ A?' A1' F@' A C ' I ' GF F' F@' ' A?B @E%' A' I@' <@D ' ?' D@?= ' @CB E@' 1AC

W##' /1' .MY' 0 2' "(21// : ')' 2(' 12 'P 42' ; +0/' +' 12 ; "*/4/' : =12J/(#' 3#' +' =7/(' J 14 2 '' &2(' +' '# +14' 9/(/ ' : /1*+(/ :' 42' 3/' 42' +' '# 3 ' '' /T< 4#' 2(' 42' +' =7/(' +' '# +' ; = : / ; /+' 2(' =9+*' +&&/14' +' '# (/ ; / :# T</=4 2 '' 2(' '4/((2)+42(# '' +' '# 1 J ' 79 19' +' '# "/(=2 '' +))(/J/ :' 3#' =<19' +14' "(21// : ')' '' +' '# 12<(4' 2&' *+7' 2(' /T< 4#' ; +#' 3/' / '4 4*/ :' 42 ' / 49/(' +4' *+7' 2(' '' 2(' '' 49/' 12<(4' 2&' 3+' 0(<"41#? 3<4' '2' /T< 4#' +)+ ' =4 49/' "/(=2 '' 79 2' 9+=' 12 ; P +' =7/(' 42' +' '# =<19' 3 ' T</=4 2 ' ' 2(' 'P ; 44/ :' =<19' +14 S ; == 3*/' '' /J P /1' .MD' 0 249 ')' '' 49 =' 14' 12 'P 4/((2)+42(# =9+*' 3/' +: ; == 3*/' '' /J P 4+ ' / :' =9+*' / '4 4*/' +' '# "/(=2 '' 42' (/&<=/ : / '1/' +)+ ' =4' =<19' "/(=2 '' '' +' '# 1(P ; ' +' "(21// : ') 'S

1@ AC 1AC @C J ?A @ F=? FC@@ 183 @=C ` AC A F@ J DC T A?@E 1AC = @C J ?A @] @@E ?> GA @=C G F AC G FA F=CE =IA C =?E G F AC G FA A =C A?1 ?@J @? 163

L2() ') 1 : /1*+(+4 2 '' 2& ((/4<(' 2& 49/ "(/ ; :' 2 '' + "2* 1# 2& '=<(+'1/ AI ! /2' H' 1 .HH' =' .M

F@ 8:' @A =J D A J =<@ = AG=? @ 1AC DA @E =J D A? DA @ A1 ? C=? @ ? C@= C = ?=?E 1AC Z C G@? ?> 1C= E C@ = ?>' F@C@ A H @?= I @ =7 F= 1' =? D@C A?' F= 1AC>@ AC A ? @C1@ =AC = @ AC DCA C@ A I@ 1AC>@E AC A ? @C1@ @E AC G ?> = E AC = ?' F@ 1AC> ?> AC A ? @C1@ ?> A1 F@ ?=J@ AC F=?EGC ?> A1 =? ? ?E@CGC @C A= =? DA d1 ? C=? @ A =? E@ =C= A?' A1 =? HC@ C?' A1 F@ DC@J J A?' F DA AC =? D=C F@C@A1 AC F= 1C= E @? = @C AC = @ AC DCA C@ A I@ = @C@E AC = E AC = ?' = @C ?> =? F E@ =C= A? =1 @C F@ =J@ F= F=B@ F@@?' >?@E F =? ?E@CGC @C AC F= @C AC J =<@ @ A1 =? F E@ =C= A? <?AG ?> F@ =J@ A F=B@ I@@?' 1C= E @? = @C@E AC F@ ?=J@ AC F=?EGC ?> A1 =? ?E@CT GC @C A F=B@ I@@?' 1AC>@E AC A ? @C1@ @E F@C@A? 1AC F@ D CT DA @ A1 AI = ? ?> =? F = AG=? @ = =1AC@ = E =?E' 5 ! <' ! A E@1C= E F * =Z@ F F@C , 1 '@C D@C A?' A 4** #! 2' F= 1AC F@ 1 C A11@? @ 1AC1@ F@ J A1 1 B@ F ?EC@E DA ?E A I@ D= E A F * =Z@ : F@ C 4" @ AC =?E A I@ C@ AT B@C@E ?' F@ =J@ J =??@C = A F@C D@?= @ J DA @E I =? A1 F@ =G ?AG 1 1AC @ C@ = ?>' A =J D E @ ; =?E 1AC F@ @ A?E =?E @B@C A F@C A11@? @ F= I@ =EZ E>@E > A1 1@ A? =?E F= I@ C=? DAC @E 1AC @B@?' @=C A D=C I@ A?E F@ @= NF F DAG@C DCAB A? D= ? D@?= @ 1 1' F =C@ @] @?E@E I F@ 8:' @A : A F@ 4 "6 4*! >"0 6 =?E A F@ = AG=? @ A1 =J D E ?' F@ = @ F@C@ ?' D@ 1 @E

.M ! /2' I' 1' AM =' .GI' L2() ')' 49/ '+ ; /= 2& 49/ 2 ; ; =2' ' /(= 2& 22 := +' :' L2(/=

F@ @A : 8 @? @E H ?' A A? E= @' =?E' =J @?E' F@ =G C@ = ?>' A F@ J =?=>@J @? , A1 F * =Z@ H GAAE 1AC@ D=C< =?E' F= @ , H I @ - :' @?= F= 7 1' =? D@C A?' AC D@C A? F= <?AG ?> =?E' G 1 1AC>@' AC A ? @C1@ AC <?AG ?> =?E' G 1 = AC = ?' 1AC> ?>' AC A ? @C1@ ?> F@' ?=J@' AC F=?EGC ?>' A1' F@' ACE' F >F' C@= C@C' AC A1' F@' AJT J A?@C A1' F * =Z@ H C@= 1AC F@' J @' I@ ?> AC A1 =? AC @ F@C' A1' F@ J A' =? DAG@C' A1' = AC?@ 1AC F@' = @' AC C=? 1@C' A1' =? A <' AC F@' ?=J@' AC F=?EGC ?>' A1' F@' = E' AJ J A?@C 1AC F@' J @' I@ ?>' A1' F * =Z@ H GAAE 1AC@ =?E' =?E' C@T B@? @ N d' AC A1' =? AC @ F@C' A1' F@ J A' =? EC=1 ? C J @? AC GC ?>' GF= A@B@C 1AC' AC ?' ACE@C' A F@' C@ @ B ?>' AC AI = ? ?>' =? A1' F@' J A?@ ?' F@' F=?E AC AE A1' F@' >AB@C?AC'=?E' AJT D=? A1' F@' =?<' A1' ?> =?E AC' A1' F@' =?<' A1' C@ =?E AC' A1' =? DC B= @' F=?<@C A?'=D A ?' A1' F@' = E' AJ J A?@C AC F= 1AC>@' AC A ? @C1@ AC = @' AC DCA C@' A I@ 1AC>@E' AC A ? @C1@ @E AC

"V 24 */=7 49+''& J/ #/+(=' &' 49/ /&' &/ '1/ +7 12 ; ; 44/ :' +&4/(' 49/ GA49 <*#' .EYI' ?=/ J2*' .' "' DH

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I ' I A F% = ' F@' A C ' F= ' =G=CE; F' J D A> J @? ' A' I @' ?'
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E C@ @E' A' I @' DCAB E@E' 1AC' F@' EC B@C' A ' ' F= <?@ =CC =>@% AC' 1AC'
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@? @' AC' <@ % <?AG ?>' F' @? @' AC' <@ ' A' I @' 1AC>@E' AC'
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@CB E@'1AC' 1@'AC'1AC'=? ' @CJ'?A' @ ' F=?' FC@@'N=d' @=C %` AC'
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@ ' -- ' 7 & FA A@B@C'R F= ' 1AC>@' AC' = @C% AC' F= ' A11@C% @C% E DA @' A1% AC' D ' A11% <?AG ?>' F@' =J@' A' I@' 1AC>@E' AC' = @C@E% =? ' I ' A1' @] F=?>@% AC' =? ' = @D =? @'' ?EAC' J @? % AC' = >?T J @? ' A1' =? ' I ' A1' @] F=?>@% AC' =? ' DCAJ AC ' ?A @' 1AC' F@' D= T J @? ' A1' J A?@ % AC' =? ' ?EAC @J @? ' AC' = >?J @? ' A1' 6 '' F' DCAJ AC ' ?A @% G F' ? @? ' A' E@1C= E% F= ' : ' 2>! '' 4*' * 4 '' =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @% = ' F@' #! "L !4 ' 4*' < ' A C % A' I@' <@D ' ?' D@?= ' @CB E@' 1AC' !* ' AC' 1AC' =? ' @C J ' ?A ' @ ' F=?' FC@@' N d @=C % ` AC' A' I@' J DC NZD@E' 1AC'=? ' @C J ' ?A ' @] T @@E ?>' GA' @=C %% G F' AC' G FA ' F=CE' =IA C% =?E' G F' AC' G FT A ' A =C ' A?1 ?@ J@? H 1#3

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0 ' - ' 7 & FA A@B@C' F= ' 1AC>@' AC' = @C% AC' F= ' A11@C% @C% E DA @' A1% AC' D ' 4** ' <?AG ?>' F@' =J@' A' I@' 1AC>@E' AC' = @C@E% =? ' ?E@C =< ?>% G=CC=? % ACE@C% 6> <4"! ' ' AC' C@b @ ' 1AC' F@' D= J@? ' A1' JA?@ % AC' 1AC' F@' E@ B@C ' AC' C=? 1@C' A1' =? ' >AAE ' AC' F= @ % AC' A1' =? ' ?A @% I % AC' A F@C' @ C ' 1A ' F@' D= J@? ' A1' JA?@ % AC' 1AC' DCA C ?>' AC' > B ?>' C@E ' H" 6 ' '! " "B ' 4 ' 4 "' 6 !2 & ' 4 *' 6 ' ' > ' > # " 6 ! 2 ' 5 6 "" 6 ' 4"# " ' 6> <4"! ' ' 4 "' " > ' AC' =? ' = A ? =I @' C@ @ D % = b =? @% AC' C@ @ D ' 1AC' JA?@ ' AC' 1AC' >AAE % AC' 1AC' =? ' ?A @% N@d I % AC' A '@C' @ C ' 1AC' F@' D= J@? ' A1' JA?@ % AC' 6 ' '! #4" & ' 4 ' 4 "' 6 !2 & ' 4 *' 6 ' ' > <' 6 4> 6 : ' " !E ' G F' ? @? % ?' =? ' A1' F@' = @ ' =1AC@ = E% A' E@1C= E% F= ' I@' > ' A1' 1@ A? % =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @% = ' F@' E C@ A?' A1' F ' A C % A' I@' <@D ' ?' D@?= ' @CB E@' 1AC' 1@' AC' 1AC' =? ' @C J ' ?A ' @ ' F=?' FC@@' N d @=C % ` AC' A' I@' J DC A?@E' 1AC' =? ' @C J ' ?A ' @Z @@E J >' GA' @=? % G F' AC' G FA ' F=CE' =IA C% =?E' G F' AC' G FA ' A =C ' A?1 ?@T J@? H N M d

W1b' 24' */=' 49+' ' & J' #/+(=' &' 49/' 2&&/ '1/' 7+=' 12 ; ' 44/ :' +&4/(' 49/' GA4*' 2&' <*#' .EYI ' //' J2 ' .' "' DH

W:b' 9 =' 1*+<=/' =' 4+0/ ' ' & +b ;' 49/' .' U (** ' I ' 1' YY' =' E' 9/(/' 7/(/' = ; *+(' "(2J = 2 ' =' '' 49/' H h /s' G' 1' I ' =' .' W b' +' :' .D ! /2' G' 1' . . ' +' .' W b' =' 42' 9+(:' *+32<(' 2 ' =/' J2*' .' "" ' EM ' E.' ? .' "' DHE

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W w b' 9 =' 1*+' =]' =' 4+0/ ' ' & (2 ; ' 49/' .' **' I ' 1' YY' ==' H' ' .M' 9/(/' 7/(/' =2 ; /79+4 = ; *+(' 1*+<=/=' '' 49/' H ! /2' G' 1' I ' =' .' W b? .D ! /2' G' 1' . . ' =' .' W.b ? .H ' .I ' ! /2' H' 1' . I ' =' .' W b' ? GA' ! /2' H' 1' HD' =' .' W.b ? +' :' EN' ! /2' H' 1' YH' +' .' W"

9 =' 1*+<=/' =' ' /7' +=' &+(' +=' 4' (/*+4/=' 42' +' # +<492(4# 2((/T</=4 &2(' 49/' "+# ; /' 4 2&' ; 2' /#' 2(42' +' # +<492(4# &2(' 49/ : /* J/(# 2(4(+' =&/(' 2&' +' #)22:=' 1' 2(42' +' # ' ;2(=/ ; /' 4 2 '' 2(+==)' ; /' 4 2& +' # =<19' <' : /(4+0 ') ' 7+((+' 4' 2(:/(' +<492(4# ' (/T</=4 ' 2(+112<' 4+3*/ (/1/ "4 +=' =' ; /' 4 2' / :' ' 49/' 1*+<=/

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@ ' x ' 7 & FA A@B@C' F= ' 1AC>@' AC' = @C% AC' F= ' A ' C% ' @C% E DA @' A1% AC' D ' A11% <?AG ?>' F@' = J @' A' I @' 1AC>@E' AC' = @C@E% =? ' A C ' CA ' AC' AD ' A1' =? ' A C ' CA % C@ = ?>' A' =? ' AD FA E' AC' A J =C ' @ = @% G F' ? @? ' A' E@1C= E% F= ' I @' > ' A1' 1@ A? % =?E' I @ ?>' b B @E' F@C@A1' F= ' I @' =I @% = ' F@' E C@ A?' A1' F@' A C % A' I @' <@D ' ?' D@?= ' @CB E@' 1AC' 1@' AC' 1AC' =? ' @C J ' ?A ' @ ' F=?' FC@@' NMqd @=C % ` AC' A' I @' J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' @=C % G F' AC' CB FA ' F=CE' =I A C% =?E' G F' AC' G FA ' A =C ' A?1 ?@J @? H 1 3

(=1244' Y ' ' ' IME' <4 49 =' 1*+<=/' '1*<: /=' 49+4 +' :' 249/ (&2()/ :' ' :2(=/P ; / '4= 9/ 72(:=' 0&2("(21<(')' 2( ) J ')' 1(/ : 4$ 7/(/' 4+0/ '' &(2 ;' 49/' HN ! /2' H' 1' YH' =' ,' W b' =' 42' 9+(:' *+32<(' 1 ' =/+' J2*' . ' "" ' EM' E . ?' : " ' DHE ' /' (' ' 9 4/ ' .' /' ' ' GME' ? G ' ' ' IMI ' +' 1+=/' : /1 : / :' 3/&2(/' 49 =' 14 W !$ 2' */==' 49+ '' & J/' #/+(=' &' 49/' 2&&/ ' 1/' +=' 12 ; ; 44/ :' +&4/ (' 49 /' GA' 49' : +# 2& <*#' . EYI ' ' /' J2*' . ' " ' DH " B 9 =' 1*+<=/' =' ' / 7 ' +' :' 7+=' &(+ ; / :' '' 2(:/ (' 42' ; +0/' "/(=2 '=' "<' =9+3*/' 792' 7 492<4 +<492(4#' ; +0/ ' +11/ "4 ' 2(' 'P :2(=/' 9 **=' 2(' '24/=' 0 "/ (" (21<(+4 2 ' S ' 79 19' +=' ' 24 &2()/(#' <' : /(49/' &2(; /(/ ' +14 ; / '4=' +: : 210$=' 1+=/' G' <==' K ' ' ' K /) ' &' 9 4/ ' .' / ' ' ' ' GME' ? G ' ' ' IMI ' =' 42' 9+(:' *+32<(' 1 ' =/ / J2*' . ' "" ' EM Y . ?' : " ' DHE W (!$ 9 =' 1*+<=/' =' 4+0/ '' &(2 ;' 49/' G. ' GG' /4 ' 1 ' DN' =' H' +' :' =' =2' &(+ ; / :' +=' 42' ; / /4' 49/' 1+=/' 2& +' : (+&4/ 49/ (' ==4V1 :' 7 49' +' 1(2== ')' 2 '' 4 ' 2(1(2==/ :' +&4/ (' 4' 7+=' ==</ : ' =' 42' 9+(:' *+32<(' 1 ' =/ / ' : " ' DHE ? J2*' . ' "" ' EM' E . ,R$ S 9 =' 1*+<=2' =' 4+0/ '' &(2 ;' 49/' . ' ** ' I ' 1 ' YY' =' .M' +' :' =' / 7' '' (/P *+' : ' 4' 9+=' 3/ / '' : 2<34/ :' 79/49/ (' 49/ (/' 3/' +' # 1+=/' '' (/*+' :' 42' 79 19' 4' 1+'' +" "*# ? 3<4 & =' <' : / (=422 :' 49+4' 49/ (/' =' 2 ' /' ; +' 2('' (/*+' :' '' 79 19' 49/ (/' +(/ 12"#92*:' 2(1<=42 ; +(# /=4+4/=' =' 42' 9+(:' *+32<(' 1 ' =/ / J2*' . ' "" ' EM' E . ?' : " ' DHE

AC> ?>=? @@ & F@C@ I F AC I =? A F@C =? D@C A?

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I A1 @] F=?>@ AC DCAJ AC ?A @ 1AC F@ D= J @? A1 JA?@ AC

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F@ = D@ A I@ 1AC>@E AC = @C@E J = I @ ?E @E = =?' A11@?E@C

=>= ? F @ =?E D ? F@E =@ ACE ?> ENJd

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F@ =J A ? A1 F E@I I GF F J @=? F@ AI = ?@E 1 C F@C J @ 1AC D= J @? =?E DA?GF F G= 1AC>@E F@ >?= C@ A1 =?A F@C D@C A? = =? ? C J @? DA?GF F F@ = @C D@C A?GA E I@ =I1@ !* < >?= C@ F=E I@@?> @ ? ? @ = ? E F@C@1AC@ =? ?E@C =< ?> 1AC F@ D= J @? A1 J A?@ G F ? F@ J @=? ?> A1 F@ - CE @ A? A1 @ -: , -8!3 9 =?E F@ IZ@ J = @C A1 1AC>@C G F ? F= @ A? NDd

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23 A B<6 8 M ZG 23 ? 8 $ $ E3 '=4(< ; / '4 =9/7 / : ' 2 12 '= : /(+4 2 ' ' 9<4
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3$$ % 2 6 ? % 2 $ 3 E6L6$? % : 7+ 234+ ' / : 3#) J) 4 9/ 12 'P
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? 3 8$ $% ? 3 E 89 2 $$ 89 8 8 3 3$ % 1 3 2#1/ HI
2% >3 * $ %Y E3 2 %< 3 % > E %>D 2V .MM ADY
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% E 8B E ? =<3 : 33 : "8 $? 6 E .DD (=9
$ %23 3$ % 2 $$ 2 %23 = W= L(/ '19 EN
@ / E ?<3 $ I. M J / AE

EG I'

H*' < 'W4"2 "'' 4*'N"! 6 'N6E " ' ' $% &'

J ' F@ 'F=B@' @]D@?E@E' E C ?>' F@!E= '1AC' D= ?>' G F' F@ C' B=? ' AC' =C ' FCA >F' =? ' C?D <@ %' =?E' F@' DC A?@C' >=B@' F@' A11 @C' A1' F@' AJD=? %' GFA @' E ' 'G=' A' D=' AC' = AG' F J'=? ' JA?@ 'F@' F=E' @]D@?E@E' ?' D= ?>' FCA >F' ' =J @ H' C?@d <@' >= @%' F@' =E' 1= @' <@ %' =' =' BA F@C' 1AC' F ' F=B ?>' D= @E' FCA >F' F@' >= @' =?E' D= E' F@' A ;' GF@C@= ' F '' JE' ?A ' D= @E' FCA >F' =? ' >= @' I@ A?> ?>' A' F@' C ' AC' D= E' =? ' A ' F@' 1= @' <@ ' ?' 1AC J ' =?E' A A C' C@ @J I @E' =?E' G= ' =?' J = A?' A1' =' C?D <@' <@ %' > B@?' A?' D= ?>' FCA >F' ' = D@ H' >= @ ' F@' 1 > C@' M' A?' F@' C >F =?E' E@' ?E1 = @ ' F= ' ' F= ' I@@?' D= E' A?' D= ?>' FCA >F' F@' C?D <@' >= @ ' 1' =' =C>@C' AC' J= @C' J' F=?' ' F= ' I@@?' D= E%' F@' J' = = ' D= E' '' ? @C @E ' ' G= ' AIZ@ @E' F= ' F@' EA J@?' G= ' J@C@ ' =' D= ' =?E' ?A '=' C@ @ D ;' I %' A?' =' = @' C@ @CB@E%' F@' A?B A?' G= ' =11 CJ@E%' N d

+*7+#4 10/4' ?' (: '+(# (+ *7+#' 4 10/4' =' '24' + '' +1T< 44+ '1/' 2(' (/1/ "4' &2(' '+2 '/# 7 49 '' 49/' = IAB@' - CE' =/14 2 ' ' 1>3

/1/ "4' 4# 3<*: ') =21 /4#

' I E ?>' A @ ' G= ' ?' F@' F=I ' A1' =< ?>' J A?@ ' A?' E@DA ' = ' ? @C@ %' =?E' DA?' C@D= ?>' F' E@DA ' C@b C@E' =' C@ @ D ' A' I@' > B@?' I ' F@' E@DA AC' 1AC' F@' = JA ' C@D= E ' F@' DC A?@C' G= ' A?B @E' A1' 1AC> ?>' AD@' A1' F' C@ @ D %' GF F' G= ' ?' F@' 1A AG ?>' 1AC J G 1' @ B@E' A1' F@' A F' =? = F C@' E ?>' A @ ' F@' J' A1' R ' '4 ' = A ?' A1' J ' F=C@ ' "A ' 9 . %' DD %' C' % +' K ' ' @ ' J I @C' G= ' F@' E@DA AC%' =?E' F@' DC A?@C' =' A = ' =>@?' A1' F@' A @ ' ' F@' AJ ' A1' F@' A @ ' F' ='EA J@?' G= ' C@= @E' = ' =?' = FAC %' G=CC=? %' AC' C@b @ ' A' D= ' F@' E@DA %' I ' ?A ' = ' ?' ACE@C ' @ E%' F= ' F@' =IAB@' EA J@?' J >F ' I@' E@ C I@E' ?' F@' ?E J@?' = ' =' G=CC=? %' = FAC %' AC' C@b @ '1AC4' F@' D= J@?' A1' JA?@ ' I 'DCAT C= A?' G F ?' F@' J@=? ?>' A1' F@' -:' ,' -8' 3 @ ' ' 9%' ' -:' 1 3

('

J6 '4 '- E 6 #' 0 6 >

2 '=4(<14 2'" 2& &2(; /(=4+4<4/=

'G= ' FA E@?' A' I@' ?' F@' @ @ A?' A1' F@' D=C ' ?' F@' = @' A1' 1AC> ?>' E@@E ' A' = ' F@' ?E J@?' @ F@C' = ' AJ JA?' =G%' AC' DA?' F@' 8' K ' : '153' ?E' = ' F ' = @' ' C@D@= @E' I ' F@' ' & ' :%' ' %' =?E' F=E' I@@?' A? E@C@E%' AJ@' @=C ' DC@B A %' = ' F=B ?>' ?@=C '1= @?' ? A' E @%' N d ' J = I@' E@@J @E' 11 @?' J @C@ ' A' C@1@C' ?' F ' D = @' A' F@' IAA< ' ?' GF F' F@' = @ ' DA?' F@' A? C A?' A1' '=C@' A' F@' 1A ?E' A @ @E%' 1'3' ?' A?@' A1' F@' = @ 'A1' FA @' = @ ' 'G= ' FA E@?' F= ' F@' = @' E E' ?A ' J@=?' F= ' F@C@' FA E' I@' ='1AC>@E' A?B@ =? @' A1' F@' B@C ' =?E ';' I ' 1' 'G@C@' =C 'E@@E' GF@C@ I ' F@' D=C '&!2< ' I@' JA @ @E%' 'G= ' 11 @? %' 783' ?E' =' B=C =? @' = ' A' F@' E@ C D A?' A1' F@' =?E ' G= ' FA E@?' ?A ' A' I@' J = @C = %' NAd

1 3' O39 ' , ' P E0' R ' Q' / ' ' O39 ' ' '@ $ 0' + ' / ' ' 0' $' 0' 2 ' ' , ') %> 3=0' < : ' '"8$ ' E 2 ' %"' 2 ' 0' . ' ' 5 6' O ' , ' (%%: 380' ' / %H' (' / ' 0') 30' 0' ' . ' ') > B ' + ' / ' ' 0' / 3 $<=0' A ' 33' O ' ' P E0' $' 0' ' . ' A ' * < ' ' ' / ' ' O ' , ' +#' ' R ' M ' J ' / ' '@ $ 0' + ' / ' ' 0' $' 0' 2 ' 0' ' . >!' ; < 85$' $30' ' ' ' *$0' o' / %%B3$$' $30' ' ' ' '@ $ 0 E%>373 0' E3' % 93 =' % ' ' > ' $' 8%N' + ' / ' ' 0' $' 0' 2 ' ' 1% ' 2 ' ' ? :3' ' 3 %8=' <=' $ 6 30' ' $' > =$' ' W ' < : 2 %$3 6 3:' $' ' 3 %8=

F@ ?AC@ JAE@C? = @ ?C@ = A? A F@1AC>@C A1 DC B= @ D=D@C @ C @ =?E EA J@? G@C@ F@ - @A - -8 N@] @?E@E A1AC>@C @ G F ? @? A E@1C= E =? ACDAC= A?I @A - -- .9d F@ . @A - -- N@] @?E@E ? <@ J=??@C I 9 @A 9d F>: @A N= ' A F@1AC> ?> A1*4" !2 I 1@A @] F=?>@ , =?E F@ :8 @A 9 F@ @ = @ G@C@ C@D@= @E I F@ & : G= C@ J=C<@E G F C@1@C@? @ A F@ @ C@D@= @E = @ F= F@ =J @ >@?@C= C @ 1C* A? C A? GA E =DD @b = A F@ =J @ ? C J@? ?=J@E ? F@ @B@C= = @ D= @E! E6"!&6 "!6G =?E= J ?@ @ =C I@>AB@C?@E I F@ =J@ DC ? D @ A1 F@ AJJA? =G N d %

DA?=? ?E J@? 1AC 1AC> ?>=G F@ DCAI= @ A1 F= G & ?C@D@= @E ?A A? B@ @B E@? @ A1 B= E A = A I@= I=C A F@ DCA @ A?N d

& F@C@= 1AC>@E ? C J@? E@C@E A A?@ A1 BA D=C ?@C ? F@=I @? @ A1 F@ A F@C F@Z C J= 1?E ? AJ@ = @ F= F@ ? @? G= A E@1C= E gF@ D=C ?@C A GFAJ F@ ? C J@? G= @C@E N d

* =? A F@C DA ? GF F F=B@ =C @? DA? ?E J@? 1C=J @E DA? F@ = @ J@? A?@E ? F F=D @C I@ ?> A1 >@?@C= =DD = A?F=B@ I@@? = C@=E ?A @E ? F@ F=D @C C@= ?> >@?@C= A1 F@ IZ@ A1 1AC>@C N Ed

E3 L> L ? L 8: E E3 2 $%83 8D 38:3: % :3 6:%83 2 83 >E3 3 E3 % 93: 8$? ? 38 $ 6 3 3: % E 8 8 E3 <$38 3 % 8% E3

('

J6 # 4 <#4 - E 6 #0 6 > 6 4M # ! 4*
U D& 2 6 #'N"4&! 4"'-4

* =? b @ A? F=B@=C @?= A F@GC @?? C J@? GF F J= I@ A? E@C@E= # # :! 4*? <6 2 E"4&! 4"'4 ! #4" & G AC= '" E !E G AC = 56""6 4"4"# " *4"< E6' & 4*&4 '4"# ! "'4*244#

63$ %8$ 62%8 E3 3D 23 3:$ D 6 3$

DAG@C A1= AC?@ G= F@ E A I@=# #G F ?' F@ J@=? ?> A1 F@ - @A - A ! ?E ?' F@ =J@ = @ G= E@ E@E F= 1AC> ?> ='E@@E G= G F ?' F= = @ FA >F F@ E C@ AC DCAB A? A1 I @b @? = @ F=E E C@ @E F= ? C J@? 1AC F@ D CDA @ 1AC GF F F@ 1AC>@E E@@E G= ? ?@?E@E FA E I@ =D=C =C 1ACJ AC FA E AJD G F @C = ?C@b @ =?E F@ 1AC>@E E@@E G= ?A ?' F= 1ACJ ?AC F=E I@@?' J =E@' ?' AJT D =? @ G F FA @ C@b @ ; 1AC F@ E C@ AC DCAB A? E E ?A J=<@ F@ E@@E GFA BA E ?' A? @b @? @A1 ?A I@ ?> ?' F@ 1ACJ DC@ C I@E =?E ?A F=B ?> F C@b @ N@d

27/(2 % 83=$:33:

A F=C @C@E A F AJD=? %D= =I @ ?' A =?E @@6 D . AC F=C @C@E A F AJD=? =?E =DCAJ AC ?A @ A1 = A F I=?<

W 3 89 % E 8% 3$ 8 @89 8:

DA?=? ?E J@? 1AC 1AC> ?> AC @C ?> =?E =DCAB@ F= =? A1 F@ F=C @C > =B@ F@ I=?< DAG@C A EC=G AC @ ?A @ 1AC F=

e f O3H 2 A6 3 = O Q S 1 2 8: $33 2 8: $ % E E 73 <338 :3 :3: 3 D 73 % E3 % 93 =% > $ " B O39) 8$%8 M" / / - / Q J 1 2 3 . O3H - O R=%8 O Q O E3 3 >E E 73 <338 :3 :3: 3 D O3H - P 88 3 %= O Q J / / O * 8: $33 O3H 3 O O

EGY H*' < 'W4"2 "'' 4*'N"! 6 'N6E " ' ' $% &' J

DAG@C' ' 11 @? 'C@ A>? K@E' I ' F@' : -' @A' ' : ' =?E'
F@' ' @A' ' : ' - 'NMd

*'2 %? $$% ='
ģ8% 3' %' E3'
2 =? 38 '% '%83'
96 83 ' 8' $E'
% 'A 8B' %'
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' (3% ' 0
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'G=' F@ E' F= '='DCAJ AC '?A @'1AC' F@' D= J@?'A1' ='> ?@='
?' = F'AC' 6 '4*'U 2 6 #' 4 'G='?A'G F ?' F@' -' @A'K'
-8 ' !23' ?' F ' = @' F@' b?@ A?'G='C@ @CB@E' GF@ F@C' F@' ?A @'
G='1AC' F@' D= J@?'A1' &4 ''G F ?' F@' -' @ '-' '-8' F@'
> ?@='I@ ?>'I ' F@' @CJ 'A1' F@'?A @' A'I@'D= E' ?' = F'AC' =?<'
A1' ?> =?E'?A @'= ' F@'AD A?'A1' F@'D= @C;' =?E' ' ' ?E@C AAE'
F=' F@'Z E>@ 'G@C@'A1'AD ? A?' F=' 'G='?A 'M^d
?' F@'1A AG ?>' = ''='DA ?'G='J=E@' BF@ F@C' F@' ? C J@?'
?'b @ A?' A E'I@' A? E@C@E' =' =' <! ' 4*' ? <6 2 'G F ?' F@'
-' @A' ' -8' F@'DC A?@C'G=' A?B @E'1A''1AC> ?>' =' @C = ?'
I 'A1'@] F=?>@' ?' F@'1A AG ?>'1ACJ';`

7 CE'6= @' (AI@C' AC@
H 7 ? @C@E' <'E= 'A1' 6' ' 9 :
S' ' #
7 'D= '1CAJ' 'F' #6''A1' * = ' 9 :'d 0
A' F@' : F'E= 'A1' > ' 9 :L'M
7 JA ?'A1'E@E A?' -' .'

7c 'N6''' ; ' '('
7 @? @J@?' 0 <'E= '4 'B>2> ' +
7 @?'E= '=1 @C' >F %

75 @= @' A'D= ' A' * C ' K4H' A= ' AC' ACE@C' F@' J'A1' G@? '
GA'DA ?E ']' F ?> '=?E'?@D@? @' I@ ?>' F@J@'D@C A?='D= '
E @' A'J@'= '= I ' @ @?=?'A1'F ' * =Z@ H' F D'_@= A 'I@ G@@?'
F C @@? F' E= 'A1' * = ' .E.I'=?E'&2<(49'E= 'A1' > ' .E.I'1AC'
B= @'C@ @ B@E

A'G % '4 0
0 ""(2J/:
7 ' / ; ' =D = ?'A1' ' * ' '_@= A
7 A' F@' AJJ A?@C'A1'F ' * =Z@ ' H' "=B %
A?EA?%H

G F' ? @?' A'E@1C= E' K=I@ F' A= ' G EAG' =>= ? ' F@' = @'
, ' F@' @ A ' A ?'A1' F@' ?E J@?'G='1AC' @C ?>' , 'G F'
F@' <@' ? @? A?'$ =?E' F@' F CE' =?E'1A C F' A ? 'G@C@' J =C'
A? ' = ?>' F@' ? @? A?' A' I@' A' E@1C= E' F * =Z@ ' Fp'
A ? @'1AC' F@'DCA @ A?' A? @?E@E' F=' F@' ? C J@?'G=' ='
I 'A1'@] F=?>@'G F ?' F@' -' @A' -' -8' 'G ' C>@E' A?' I@'
1' A1' F@'DC A?@C' F=' ' =DD@=C@E' @=C ' F=' F@' ? C J@?'
B=' ? @?E@E' A' I@''='I ' ?E@C' F@' 8' @A' ' NI' ' ';' F=' '
G='?A 'EC=G?' A' I@'DC@ @? @E'1AC' = @D =? @' AC' D= J@?'I ' F@'
AJJ A?@C'A1' F@'?=B '=' ='I 'A1'@] F=?>@',I ' ?'ACE@C' A'
DCA C@' =?' = >?J@?'A1' ' = ACE ?>' A' F@' 1 1 @@? F' @ A?' A1'
F=' = @'$ F=' 'G=' ?A ' ='I 'A1'@] F=?>@' I@ = @' 'G=

Wwb' /V' ' /+#' ' ' ' ' ' '
4 N % B5$' $3' 'R3'A 8 ' M '
X% B$E 3'R38 '*$$' ' J ' *8 :'$33'
) $%8$' $3' 'R3 E' ' '@ $ 0
+' / ' ' $' 2' 3 ' 2' '
>E3 3' 8' %<L3 %8' E ' 3 8' %68 $'
%' E3' 8: ?38 '>3 3' 8% ' > E 8' E3

'(3%' '3' ' 8:' '(3%' 0h ' $' '
<3 6$3' E%$3' $ 6 3$' >3 3' %8 83:' %'
E3' % 93 ='% ' 3 3 2 $' % ' , ' ' '
>E3 3 $' E3' %68 $' 8' C63$ %8' E 93:'
3' % 93 =' % ' ' 3 3 2 ' % ' 5' '
>E E' >3 3' 83 E3 ' ?%83=' 8% ' 9%%:$'
> $' %>3:

?A 'EC=G?' A?'=? 'D@C A? 'IA ?E' A'= @D 'AC'D= ' ' '=?E' F= ' F@'
AJ J A?@C 'A1' F@'?=B 'G@C@' C@JAB=I @'='D @= C@%'=?E'J >F '
I@' F=?>@E'I@ G@@?' F@'EC=G ?>'=?E'DC@ @? ?>'A1' F@' I ' ?'
1 @'E F@C'F=?E' 'G=' A? @?E@E' F=' F@'? @? A?'G F'GF F' F '
? C J@?'G=' J=E@'G='?A' J=@C=%'=?E' F=' 'G=' ?A '?@ @ T
=C ' A' A? = @!=' I ' A1'@] =?>@' 1AC' F ' D CDA @' F=' F@'
D=C @ 'A?' GFAJ' 'G=V EC=G?' FA E'I@' =I @' A' = @D %'AC'@B@?'
I@'@] ?>'D@C A? ';=?E' F=' 'G=' @?A >F' 1' F@' ? C J@?'D CT
DAC @E' A' I@'EC=G?' A?' =D@C A?' AC' D@C A? ' A'GFAJ' ' J >F ' I@'
DC@ @? @E' ?' ' = @'C@ @CB@E' A?' F@' b @ A?' GF@ F@C' F ' ?T
C J@?'G=' DCAD@C 'E@ C I@E' = '=' I 'A''@] F=?>@%' F@' Z E>@ '
G@C@' A1'AD ? A?' F=' F@' A?B A?' G='C >F ;' F=' F@' ? C J@?'
G=' ?' 1AC J'=' I ' A1' @] F=?>@%'=?E' F=' F@' 8' @A' % ' :%'E E'
?A 'DC@B@?' 'I@ ?>' A' A? E@C@E' I!3
F@' ?E J@?'= @>@E' F=' F@' DC A?@C' F=E' ?'F 'DA @ A?' E3' % 93 ='
F@'1A AG ?> I 'A1'@] F=?>@$ `
=AC @J@?I'
1 8% H! 7 * =? F@ @C%'#@ @? I@C' - F%' 9 ' ='I 'G=
7 ' @B@?' E= H >F 'Za=' A' * C ' K=I@F' F@CGAAE%'G EAG%
* C=J' F@CGAAE%' D ? @C%' ??@' * =>E= @?@' F@CGAAE%' D ? @C%' ' %'=' %
= A' ??@' * =C =' F@CGAAE%' ?AG' F@' G 1@' A1' F=C @ ' @ = C %
b%'AC' ACE@C%' F@' @]@ C]@ 'A1' F@' = @' AF?' F@CGAAE%' b %
i8% ' ?'1 %'1AC' A ' ?E@C' DA '"A ' % -
7 A' F@' C @@ 'A1' F@'5@ =?' 1@' 11 @%' A?EA?
G K '8 +"
=?E' F=' F@'1AC''' 4 ' F@' I= <' A1' F@' = E' I ' A1' @] F=?>@' ='
@C=?' ?EAC @J@?'='1A AG ';`
G ##'F P # ' : 0X'A
G F' ? @?' A' E@1C= E' AF?' 5@ ' * DC= ' =?E' A F@C ' +'
C @@ 'A1' F@' 5@ =?' 1@' 11 @' F@C@' G@C@' 1 1 @@?' A F@C'
A ? '1AC' 1AC> ?>' =?E' @C ?>%'B=C ?>' F@' = @J@?' ='=?E' F@'
D=C @ ' ? @?E@E' A' I@'E@1C= E@E ' F@' DC A?@C'F=E' I@@?'= AC?@ '
A' F@' = @' *C' F@CGAAE%'GFA' E @E' ?' 9 % @=B ?>' ='G EAG'
=?E' FC@@' E= >F @C ' F '@]@ C]@ %'=?E' =' >@? @J=?' @]@ AC%'
GFA' J@B@C' AA<' A ' D AI= @' * C' F@CGAAE' F=E' ? C@E' F ' 1@'
?' F@'5@ =?' 11 @'1AC' 4* HH ' F@' DCAI= @' A' * C ' F@CGAAE'
=?E' F@C' E= >F @C 'G= ' =<@?' A %'=?E' F@' DC A?@C' G FA ' F@ C'
<?AG @E>@' J=E@' =DD = A?' A' F@' A11 @' 1AC' D= J@?' A1' F@'
DA %'GF F' F@' DCAE @E' A' * C' = @%' F@' =>@?' A1' F@' A11 @%'
A>@ F@C' G F' F@' DCAI= @%'=?E' 'G=' =CC=?>@E' F=' D= CF@?'
FA E'I@' J=E@'I ' F@'I ' ?' b @ A?%'GF F' * C' = @' EC@G%'=?E'
>=B@' A' F@' DC A?@C' A' DCA C@' F@' ?EAC @J@?'A1' F@'@]@ C]@V
?' =? =C %' 9: '' F@'I 'G='D= E'I ' F@' DC A?@C' ? A' F@'%I=?<'
=' A <DAC%'G F'GF F' F@' <@D ' =?' = A ?%'G F' F@' =DD=C@?'
?EAC @J@? 'A1' * C ' F@CGAAE' =?E' F@C' FC@@' E= >F @C %' =?E'
=JA?>' F@ @' F@' A?@' ?=J@E' ?' F@' ?E ?=@?%' =?E' F ' AG?'
?EAC @J@?' =1 @C' F@ C %' =?E' 'G=' A?' F=' E= 'D = @E' A' F '
= A ?%'=?E' F@' ? =? 'I@>=?' EC=G ?>' DA?' ' 'G='AIZ@ @E'
F=' F@'I 'I@ ?>' J=E@'D= =I @' A' F@' @]@ C]@%'AC' ACE@C%'G='
?@>A =I @' A? ' DA?' ?EAC @J@?'I '= ' F@' = E'D= @@ %'=?E' F@C@T
1AC@' F=' F@' 1AC>@C 'A1' A?@' A1' F@' = E' ?=J@ 'G='?A '='1AC>@E'
?EAC @J@?'A1' F@' = E' I %'1!3 ?E%' DA?'=' = @'C@ @CB@E%' 'G=

"B 9=92* ;S' 1+=/' '+':' 'W "B 9/(f 7/(f=/J/(+' 249/(236/14 2'='
- .% 4+0/'' 3<4 +=' 49/' "(=2'/(S' 12<'='/' +:

A? @?E@E' F=' F@' ?EAC @J@?' J@? A?@E' ?' F@' ' & ¶1¶ 'N ¶ ' ¶ J@=?' F' =?' ?EAC @J@?' = ¶ 1'>@? ?@¶GA E' I@' B= E';' J ' I@' F' = ' J >F ' IA F' ?' =G' =?E' 1= ' E@1C= E' F@' ?T EAC @J@?' A1' A?@' ?=J@' G= '?A' ?EAC @J@?' = ' = ¶1AC' 'GA E'?A' C=? 1@C' F@' DCAD@C ' ?' F@' I ' A' J =<@' F ' =' >AAE' ?EAC @T J@?' F@C@' J ' I@' =' >@? ?@' ?EAC @J@?' A1' ' F@' 1A C'?=J@ ' F@' = @' D@=<' A1' 7=?' ?EAC @J@?' A?' AC' = >?J@?' A1' =?' I 'ZH @=C ' F@G ?>' F=' F@' ?EAC @J@?' J ' I@' F' = ' G ' =JA ?' A' =' B= E' = >?J@?' A1¶ =?E' G ' C=? 1@C' F@' @? C@' DCAD@C ' ?¶ F@' I '¶' ?' F@' D=C 4' A1' F@' CAG?' ' G= ' =C> @E' F=' F@' DC A?@C' F=E' 1AC>@E' A?' F@' I= <' A1' F@' I ' =?' ?EAC @T J@? ' A E' ' ?A ' I@' = E' F=' A?@' A1' F@ @' @]@ C]@ ' F=E' ?EAC @E' F@' I 'V 1' F@C@' ' =?' ?EAC @J@?¶GF F' G ' 6 ! *'' F@' ?EAC @J@?' A1' =? ' A?@' A1' F@' @]@ C]@ ¶ F=' ' G F ?' F@' = @' ? ' ?EAC @J@?' F=' G ' I ?E' =? ' A?@ D@C A?' ' 11 @? ' ?' ?EAC @J@?' A1' =' C=?>@CH' ?=J@' GA E' I@' G F ?' F@' ' 1' F@' D=C @' G@C@ ?A' @]@ C]@ ¶ =?' ?EAC @J@?' A1' F@' ?=J@' A1' =? ' A?@' GA E' I@' =?' ?EAC @J@?' G F ?' F@' ' DDA @' =' I ' D= =I @' A' FC@@' D=C @E''=?E' =' D@C A?' 1AC>@' F@' ?=J@' A1' A?@¶ =?E' >@ ' F@' ?EAC @J@?' A1' F@' A F@C ¶GA E' ?A' F=' I@' =?' ?EAC @J@?' V ! ? ' ?EAC @J@?' H ?' F@' ' J@=?' =? ' ?EAC @J@?' GF F' ' = ' = @E' A' F@' 1A C' D= @@' J >F ' F=B@' @E' A?' F ' I ' = '@]@ C]@ ';' F@C@1AC@' =? ' A?@' A1' F@J' A E' F=B@' C@ @= @E' F@' = A?' F@ ' =C@' ZA ?' @?=? ';' = ' F@' ? E@? ' A1' ZA ?' @?=? ' = = F';' =? ' A?@' A1' F@J' J >F ' C=? 1@C' F@' DCAD@C ' F@' A C' AA<' J@' H1 d A? E@C';' =?E' =1 @CG=CE ' F@ E' F@' A?B A?' C >F ¶' A?' F@' >CA ?E' A1' =? ' ?EAC @T J@?' I@ ?>' 11 @? ¶1 3

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; 44/:' 2'' 49/'+()< * /'4'9/&2 /'49/'6<:)/ ^' 49+4' 49/' 1+=/' 12<*:' 9/' :/1 :/:' '' 49/' 23P 6/14 2'' +32J/' =4+4/:' +' :' 49/' 6<:)/=/VP "(/=/:' '2' 2" ' 2'' 2'" + '#' 2& 49/' 249/(= 49/#'+(/' 9/(/' 2 ; 44/: '% B /)' ' '4/(32442 ; ' :' /'' ' M I.' G'M ' ' HD

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DA?=?= ?E J @? 1AC @C ?> =1AC>@E ACE@C 1AC F@ D= J @? A1 JA?@ =DD@=C@E F= F@ DC A?@C @C@E A?= F@ - 9 F A1 19/T<f =+ 2(:/(&2(49/ +# ; / 4 2& > =1AC>@E F@b @ I@=C ?> E= @ F@ - F A1 > =?E G= AIZ@ @E F= G= ?A =?ACE@C 1AC F@ D= J @? A1 JA?@ = G= DA E= @E ; I C@ G@ G= A1 AD ? A?= F= G= =?ACE@C 1AC F@ D= J @? A1 JA?@ZC G F ?= F@ J @=? ?> A1 F@ = @ =?E F= A J =<@ C F G= ?A ?@ @ =C F= F@ D=C FA E I@ IA ?E A D= = ?A @ 1 >@? ?@ J >F I@ F= F@C@ G@C@ ?A @11@ =?E F@?= F@ I=?<@C GA E ?A I@ IA ?E A D= F@ F@b @ = A? @ =?E @ GA E I@ =?ACE@C 1AC F@ D= J @? A1 JA?@ 1 3

AC> ?> =I ' D= =I @ A F@ DC A?@CH AG?= ACE@C =?E @C ?> G FA ?EAC @J @? = = =1AC =E@I G= FA * @= A I@ = AJD @ @ A11@? @ F@ A ? ? F@ ?E J @? J AC@ D@ =C =DD =I @ A F@ 1= A1 F@ = @ F=C>@E F= F@ DC A?@C F=B ?> ?= F DA @ A?= D=D@C GF@C@A?= G= GC @?= AC DC ? @E A F@ 1A AG ?> @?AC ;

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G F' ? @? ' A' E@1C= E' F@C A?% C@=B@ % ,' A' F@C' A ? ' F=C>@E' =?' @C ?>% , ' ;' =?E' A F@C ' =?' ? @? ' A' E@1C= E' E 1T 1@C@? ' D@C A? % =?E' = J A?> ' A F@C ' A?@' * = F@G') = @ ' * ') = @ ' <@D ' =?' ??' = ' B@CDAA % A' GF F' F@' ZZC A?@C' = J @' A?' F@' : F' A1' F@' DC@ @E ?>' > % G F' =' FAC @% =?E' A? ? @E' FA=CE ?>' =?E' AE> ?>' F@C@' ? ' F@' - . F' A1' F@' = J @' J A? F ' A C' AC' 1 B@' E= ' I @1AC@' F@' - . F% =' D@C A?' = J @' A' F@' ??' =?E' 44 ' =G= ' F@' FAC @% =?E') = @ H ' G 1@' F@?' E C@ @E' F@' 56! "' 4' 6""'' < ' DC A?@C' F ' I ;' =1 @C' GF F' F@' DC A?@C' = J @' A' F@C' =?E' >=B@' F@C' F@' F ' A1' @] F=?>@% 1 @E' D' = ' = @E' ?' F@' ?E J @? % = ?>' F@' FAD@E' F= ' GA E' = 1 ' F@C' 1AC' GF=' F@' F=E' F=E%;' A' GF F' F@' =? G@C@E% 7 ' E=C@' = ' ' G ;H =?E' AA<' ' 1CA J ' F J ' =?E' <@D ' ' ? ' F@' - . F' A1' > % GF@?' F@' DC A?@C' G=' =DDC@F@?E@E ' DA?' CA @] = J ?= A?% F@' G 1@' = E' F= ' F@' DC A?@C' E E' ?A ' > B@' F@' I ' A1' @] F=?>@' A' F@C' = ' D= J @? ;' =?E' F= ' F@' <?@G' F@' A E' J =<@' ?A' @' A1' F@' I ' ? ' F@' DC A?@C' ?EAC @E' ;' F= ' F@' A E' F@C' F@' E E' ?A ' G F! A' E A ?' % =?E' GA E' D= ' F@C' ?' =' 1@G' E= ' G FA ' ' F@' 1 C F@C' = @E% F= ' F@' A? E@C@E' F@C @ 1' = ' <@@D ?>' F@4 I ' 1AC' F@' DC A?@C% =?E' ?A ' 1AC' F@C @ 1 ' F@' DC A?@C' F=E' I @@?' =' @C<' ?' F@' FA @' A1' F@C A?' =?E' A % 1CA J ' ' 9 ' A' ' 9 :% =?E' ' F=E' I @@?' = ' ?' F= ' FA @' A' F=B@' F@b @ ' >?@E' 7 F@C A?% C@=B@ % =?E' # @? A?%H < @D ' ?' =' EC=G@C' G F ?' F@' DCAD@C' AE ' A1' GA' D@C AC' @C< % I ' = @ I @' A' F@' DC A?@C% GFA' G=' A J @ J @ ' D@C J @E' A' >?' F@ J ' F@' GFA @' A1' F@' GC @?' D=C ' A1' F@' I ' D1' @] F=?>@' = @E' ?' F@' ?E J @? % @] @D ' F@' >?= C@' 7 F@C A?% C@=B@ % =?E' # @? A?%H G=' ?' F@' F=?ET GC ?>' A1' F@' DC A?@C% C=F=J % % @1 ' R F@' = @' A' F@' Z C % @ ?>' F@ J ' F= ' F@' @' J =E@' A1' F@' ? C J @? ' GF@?' 1 @E' D' I ' F@' DC A?@C% FA >F' FA ' ?EAC @E% G=' A? B@' @B E@? @' A1' F@' 1C= E @? ' ? @? A?% =?E' DCAB@E' = ' G @ ' F@' A ? ' F=C> ?>' F@' = = ' 1AC>@C % = ' FA @ GF F' F=C>@E' F@' @C ?>% , % <?AG ?>' ' A' F=B@' I @@?' 1AC>@E' ;' =?E' F@' Z C ' C@ C?@E' =' B@CE ' A1' > ' ' C=F=J % % EA I ?>' 3 F@ F@C' F@' A >F ' ?A ' A' F=B@' @1 ' F@' b @ A?' A1' 1C= E @? ' ? @? A?' J AC@' AD@?' A' F@' Z C ! ` ?' GF F' = @' F@ ' J >F ' F=B@' 1A ?E' F= ' F@' DC A?@C' E E' ?A ' J @=?' A' E@1C= E' =? ' D@C A?% I % I ' D= ?>' F ' C@ <A? ?>' =?E' =< ?>' I = <' F@' I % A' J =<@' ?A' 1 C F@C' @' A1' ` C@ @CB@E' F@' = @' 1AC' F@' A? E@C= A?' A1' F@' Z E>@ % GFA' G@C@' A1' AD ? A?' F= ' F@' 1= ' = @E' = J A D @E' A' 1AC>@C % =?E' G F' =' 1C= E @? ' ? @? ' Z

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Y& @' F=B@' @@?' F= ' GF@C@' =' DC A?@C' G= ' ?E @E' 1AC' 1AC> ?>' =?' = @D =? @' A1' =' I ' A1' @] F=?>@%' =?E' ' =DD@=C@E' F= ' = ' F@' J @' GF@?' F@' = @D =? @' G= ' G C @?' =' I =?<' G= ' @1 ' ?' F@' I ' 1AC' F@' EC=G@CH' ?=JQ%' ' G= ' F@ E' F= ' F@' ?E J @?' G= ' ?A ' DT DAC @E%' !=' F@' ? C J @? %' A' GF F' F@' 1AC>@E' = @D =? @' G= ' =11]@E%' G= ' ?A ' = ' F@' J @' A1' F@' 1AC>@C ' =' I ' A1' @] F=?>@%' F@C@' I@ ?>' ?A' EC=G@CH' ?=J@%' 1E3' ?E' GF@C@' DA?' =?' ?E J @?' A?T = ? ?>' A ? ' 'C' 1AC> ?>' =? ' @C ?>' =' !' ' A1' @] F=?>@%' ' G= ' DCAB@E' F= ' F@' DC A?@C' GCA @' F@' = @D =? @' A?' =' I =?<' =J D%' =?E' F@' I ' G= ' EC=G?' GA' E= ' =1 @CG=CE ' ?' F@' =I @? @' A1' F@' DC A?@C;' 5= @ AF%' %' EA I @E' GF@ F@C' F@' F=C>@' A1' 1AC>@C ' A E' I@' L DDAC @E%' I@ = @' =' F@' J @' GF@?' F@' = @D =? @' G= ' GC @?' A?' F@' =J D%' ' G= ' =' I =?<' D=D@C%' I ' = E' F= ' ' G= ' ?A ' B@C ' J = @C = ' 1' F@' DC A?@C' @C@E' F@' I ' =1 @CG=CE %' <?AG ?>' F@' = @D =? @' A' I@' =' 1AC>@C %' 1 3

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W2d /V ' (0/44' ' ' ' EY 23' HYG' .' "' YYD' /) '&' //' G ' " 5' /) ' ' <44/(7 10' G ' ' 23' ' 23' GE. '4 .' 'YYG' +' :' 249/(' 1+=/=' .NY' +(0/' ' .' "' YGI +=' 42' 49/' =<&& 1 / ' 1# 2&' 3 **=' 2&' /V19+') /' W^Y /) ' ' 220/' E' ' ' ' AEG' //' 1 ' ' "2 ' 4 2&&2(; /) ' ' +70/=' G' 22' ' ' ' YM' " B' /) ' //.' G' 22' ' ' ' YG' .' "' YY. ' /) '&.' ' '/+(' G ' ' 23' E' ' 'L' YGI' /) ' &' 42' / ' .' / ' ' ..D' .' "' YYM' /) '&' +(4*/44' G' ' M' .E. ' G' ' ' ' HYI' //' .' "' E.N

' &2()/ :' <' : / (4+0 ')' "<("2(4 ')' 42' 3/' =) ' / :' 3# ' ' +' :' "+(' "2(4 ')' 49+4 ' =9+** "+#' 7+=' 7 49 '' 49/' ' ** ' I 1' YY ' =' H '' <' : /([4+0 ')' &2(' 49/' "+# ; / ' 4 2& ; 2 ' /# 7 49P 2<4 + ' # 12 ' P = : /(+4 2 '' 7+=' 7 49 '' 49/' K ' ** ' I ' 1' YY ' =' H ' +&4/(' 49/' "+= ')' 2& 49/' .X ' GM /4 ' 1' ND

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& F@C@' F@'D = ? 11'=?E' E@1@?E=?' ?'=' ' ?' F@' A ?' AJ'' @? @C@E' ? 1!=?' =>C@@J@?' GF F G= ' = ' 1A AG %' @] @D 4 >4 FR Z <' D=C ' I@ G@@?' IC= <@ '$!' F=' F@' = E'D = ? 11' =CC=?>@' A'G= ' 1AC' F@' I= =? @' ?AG'E @%' =?E' A' G= B@' = ' DCA @@E ?> 'GF= @B@C' =>= ? ' F@' E@1@?E=?'1AC' F@' @CJ' A1'1A C' JA? F ' B K'1CAJ' F@' F'E= 'A1' * = %' 9 %' A' F@' F'E= 'A1' @D @JI@C%' 9 ';' =?E' A'= AG' 1AC' D C E' I= A?' w ' ' =?E' A?' A ' ' ' = =? @' E @' . ' '9E z%' DA?' F@' A?E A? '=4' =IAB@%' =?EH?AG' = @E' F=' F@' E@1@?E=?' EA' ?AG4'D=' A' F@' D = ? 11' F@' J' A1' : ' @' @ B@E' F@' J' A1'1A C' DA ?E 'A?' = A ?' A1' F@' E@I '=?E' A ' ?' F ' = A?%' F ' - F' E=' A1' DC %' 9 ' =?E' F@' I= =? @% ' '9# ' A' I@' D= E' F' E=' A1' @D @JI@C%' 9 z%H GF F'G=' >?@E' I ' IA F' D=C @ %' =?E' F@' E@1@?E=?' '=1 @CG=CE ' ? @C @E' F@' D=C ' I@ G@@?' IC= <@ %' F@' @11@ ' A1' GF F' G=' A' C@E @' F@' I= =? @' I ' I ' %' =?E' A' DA DA?@' @' D= J@?' A1' ' ?@=C ' =' @=C' =?E'1 B@' JA? F ' ? @=E' A1'1A C' JA? F ' %' %' F@ E' F=' F ' G=' ?A ' =?' ?E@C =< ?>' 1AC' F@' D= J@?' A1' JA?@ %' = ' F@' D = ? 11'E E' ?A ' ?E@C =<@' A' D= '=? F ?>';' =?E' F=' 'G=' ?A' =' 1AC>@C 'A1' =' C@ @ D %' 1AC' F@ ! ' G= ' ?A' = @C= A?' A1' F@' J' 1AC' GF F' F@' C@ @ D 'G= '> B@?%' 1 3' R

'& (& ! R

Y6 '4 ' - E 6 #' 0 6 > '6 ' 4' - !E

+=/=' +=' 42'
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& @' J= '?AG' FAC ' A? E@C' F@' b @ A? 'GF F' F=B@' =C @?' = ' A' F@' ? C J@? 'GF F' J= 'I@' A? E@C@E%= '" !E 'G F ?' F@' = @

0 /1/ J/ :' F@' A? @F '=IAB@%' I 'J@%' ' & H%' , %' '=' 1 ' @ @? ' = @J @? ' A1' F@'C@ @ D ' ?' F@' ?E T J @? %' G FA ' @ ?>'1AC F' F@'I 'A1'
@J ' A' GF F' 'C@1@CC@E

& F@C@' F@'DC A?@C' &=' ?E @E'1AC' @C ?>' =' 1AC>@E' ?C@ @ D ' 1AC' JA?@ %!' ?' F@'1A AG ?>' GACE ` 7 @ @ B@E' F@' A? @? '=IAB@%' I ' ?@%' @DF@?' & F@C 'H ` '=DD@=C@ ' F=' F@'G= ' @JD A @E'F '=' D@C A?' GFA' <@D ' =' A @C A11 @' A' =CC ' A ' F@' DC K@ JA?@ %' G F' =?' = A ?'A1' F@'E@E A? %' =?E' A' D= ' ' A' F@'D=C %' =?E' IC ?>' I= <' F ' C@ @ D %' =?E' F=' F@'1A AG ?>' = A ?' G= ' E@T B@C@E' A'F J %' G F' JA?@ ' A'D= ' F@' I= =? @' $ `

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7 # @E ' 1AC' @]D@? @ %' =EB=? @ %' =?E' C@ J ?>
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F=' DA?' DCAE ?>' F ' = A ?'=>= ?%' GF@?' F@' @ @E' F ' = T A ? 'G F' F ' @JD A @C%' F@'C@ @ D ' = @E' ?' F@' ?E J@?'G= ' = ' F@' IA AJ'A1' ;' =?E' F= 'F@' F=E' ?A ' D= E' F@' JA?@ ' A' * C%' & F@C %' GFA @' F=?EGC ?>' F=E' I@@?' 1AC>@E ' 'G= 'AIZ@ @E' A?' I@F= 1'A1' F@' DC A?@C' F= ' F 'C@ @ D ' E E' ?A ' ACC@ DA?E' G F' F@' ?E D @? ;' 1AC' ?A F ?>' G= ' @' 1AC F' I ' F@' C@ @ D ' = ' 1AC' < ' 4 ' 6 : 4 G' =?E' F= %' A>@ F@C' G F' F@' I ' A1' D=C =C %

W=D /)' ,' 2/*92' N' 2V' ' ' E 1 3' /)' ,' ( )94' G' L' 'L' HGM
9/' /12(: /(

G=' A?@' @? C@' F ?>;'=?E' ' I@ ?>' @' 1AC F4' 7GF F' = E' 1= @' C@ @ D %' , %' '='1A AG %H F@' GFA @' A >F' A' F=B@' I@@?' @'1AC F%' =?E' ?A ' D=C ' A? %' ?=J@ %' T < ' 4 ' 6:4 P GF F' E E' ?A ' =DD =C' A' I@' F@' =J@%' ?AC' A' I@'='C@ @ D '1AC' JA?@ %' ?E' 'G=' = A' C>@E%' ?'=CC@ ' A1'Z E>J@? %' F=' ' E E' ?A ' =DD@=C' I ' F@' C@ @ D ' @ 'A F ?' F@' ?E J@?' F=' 'G=''=' !E '*4"'&4 ' 'AC' GF=' 'G=' 1AC;'=?E' F=' I@ ?>' A? '1AC' < ' 4 ' 6:4 '=?E%' ?A F ?>' @' 1AC F' A' F@G' GF=' F@ 'G@C@%' AC' @]D = ?' F@' C@ @ D %' ' G=' ? ? @ > I @' F@' Z E>@ ' G@C@' A1' AD ? A?' F=' F@' ?'' E J@?' G=' 11 @?%' 1AC' 'G=%(- ! #' < ' 4 ' 6:4 P GF F' F@G@E' ' A' I@'='C@ @ D '1AC' AJ@ ?>%' FA >F' F@' D=C T =C ' G@C@' ?A '@]DC@ @E';'=?E' ' G=' '=E' A' I@'='1AC>@E'" !E ' *4"'&4 ' ' ?E@C4' F@' F=?E' A1' @DF@?' & F@C %' 1AC' ':='; =?E' F@' I ' @ 1'G=' A? '@B E@? @' A1' F@'1= %'=?E' F@G@E' ' A' I@'=' C@ @ D'*4"'&4 ''=' F=C>@E%' NBd

'=DD@=C ' A' F=B@' I@@?' F@ E%' ?' A?@' = @%' F=' '=?' @? C 'A1' F@' C@ @ D' A1' JA?@ ' AC' ?A @ '' J=E@' I ' =' = F @C' A1' F@' =?<' A1' ?> =?E' ?' F@' I=?< IAA<' A1' =' C@E AC%' G=' =?' 6 4> 6: '" 0 !E '1AC' F@' D= J@?' A1AJA?@ ' G F ?' F@' .' @A' -%' ' --' 753 F@' DC A?@C' G= F@' C@= C@C' A1' =' BA ? =C ' 1C @?E ' A @ %' GF F' G=' ?A '@?CA @E' 'E 'G=' N=JA?> ' A F@C' F ?> d' A' D=' ? A' F@' & @ ' (E ?>' ? A?' =?<' JA? @ ' C@ @ B@E' = ' F@' J@@ ?> ' A1' F@' A @ ' ?' F ' AG?' ?=J ' ?' F@' 1 C ' = CE=' ?' "AB@JI@C% 98.%' F@' C@ @ B@E' = ' =' J@@ ?>' A1' F@' A @ '- /' A' D=' ? A' F@' I=?<%' =?E' A?' F@' 1 ! ' = CE=' ?' #@ @JI@C' 1A AG ?>' F@' DC A?@C%' = ' =' J@@ ?>' A1' F@' A @ %' = E' F=' F@' F=E' D= E' ' ?%' =?E' DCAE @E' =' IAA<' D CDAC ?>' A' I@' =' I=?<@CH' D= IAA<%' ?' ACE@C' A' BA F' A' F@' A @ ' F=' F@' J' A1' - _' F=E' I@@?' D= E' ?' A' F@' = E' I=?<' ' I @b @?' J@@ ?> ' A1' F@' = @ ' F@' J ' A1' 8 .' .': /%' = E' N%' G@C@' D= E' A' F J' 1AC' F@' <@' D CDA @%' =?E' F@' = E' IAA<' G=' DCAE @E' I ' F@' DC A?@C' =?E' F@G?' A' F@' J@JI@C ' = ' J@@ ?> ' A1' F@' A @ %' A' BA F' F@' D= JbD ' A1' F@' @B@C=' J ' ? A' F@' F=?< ' F@' @? C @ ' ?' F@' FAA<' G@C@' = '1A AG '$ `

1 * C' F=C @ ' J F%' F@D @ %' ?' = A ?' G F' F@' & @ ' (E ?>' ? A?' =?< ?>' AJD=?

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F@' IAA<' GF 6' F@' DC A?@C' F=E' A' DCAE @E' 1CA J' J @' A' J @' G=' 1 A %' =?E' E E' ?A ' C '@C@DC@ @?' F@' = @' A1' = A ? ;' A?' F@' A? C=C %' F@' DC A?@C' F=E' A? 'D= E' ? A' F@' I=?<' F@' FC@@

WXd /=4 10S' 1+=/' G +=4' ' '1' .N' =' HY' "' NGA
5 6 + ; =2 'S' 1+=/' .' /+19' .EM' G +=4' ' '1' .N' =' HY' "' NGY' '49/' *+=4' +<492(4# 49 -' "2 '4 (/="/14 ')' '

' =' '24 (/"2(4/:? 3<4' 4' =' (/&/((/:' 42' +=' 3/ ')' =4+4/:' '' .' /+19' //' #2'S' 1+=/' G' +=4' ' '1' .N' E' HY' "' NHI' !(2=/'

'' / '4(#2&49/' (/1/ "4' 2& ; 2 ' /# 2('24/=' ; + : /' 3# +' 1+=9 /(' 2& 49/' + 'O' 2& ') *+ ' : ' '' 49/' 3+ '0 3220' 2& +' 1(/ : 42(' K7+=' +4/' +' S ' ` '&2(' 49/' "+# ; / '4' 2& ; 2 ' /# 7 49 '' 49/' D' ! /2 ' G ' 1 ' GG' '&2() / :' 3+ '0/(S=' "+==P 3220

EHI 8 ^ 3 5 & .i

J A1 A?F@ 9 F "AB@JI@C 98.: _A?#@ @JI@C-FE
989=?E A?@IC =C --?E 98 ;=?E F@F=E C@E @E F@
=JA ?? F@ I=?<GF F ? E@E JA?@ D=E ?=?E J@C@ F
F@C@A?A F@ J A1 _ I EC=G ?>A = B= A
J@ J A1 JA?@ GF F F@ F'E =DDCADC=@E A F AG?@
G= AIZ@ @E F= F@DC A?@C G= ? @C@ @E F@JA?@ ;=?E
F= = F@ IAA<GF F F@ DC@ @? @E =@E F@ JA?@ GF F F@
F=E C@ @B@E F@ J@C@ J C@DC@ @? = A?A1 F@ C @ =@A1 F@
= A ? I@G@@?F J =?E F@ I=?<G= ?A A11@?@ F@AIZ@T
A? G@C@ AB@ @E q?E F@Z C '@C@ AE F=1 F@DC A?@C
DC@ @? @E =1= @ = A ? A F@ J@JI@C G F ? @? F@C@I A
AI = ?C@E 1AC F=B ?>E D=E ? A F@ I=?<F@B=C A J
GF F F@F=E C@ @B@E=?E A I@ A? ? @E ?F1 A11 @A1 C@= C@C
G F =B @G A AI = ?A F@C JA?@ 1CAJ F@ A @ GF F F@
J >F 1C= E @? =DDCADC=@ A F AG?@ @ F@ FA E1?E
F J > ;=?E DA?=@C@ @CB@E G=F@E F=F@ A?B T
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J &2()/:+112<'4+3*/(/P 1/ "4
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F@C@ @1 A1 F@ <=?E I =A1E@I=@E J@JI@C =?E==
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F@ EE@C 1@E =B ?> =?<1AC F@ A @ :_GF F G=
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F@DCAE @E=IAA<?EAC @E 7 =B ?> =?< "@G C@@ ET
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7 & @F=B@C@ @B@E 1CAJ F@ AG F@C AG?? A?1A C DA ?E
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G F ? @? A E@1C= E F@ > =CE =? A1 F@ AG F@C AG?? A?
F@DC A?@C G= =DAAC C=@ A @ AC A1 F@ ? A?=?E FA E
F=B@ AE>@E=IA : ?F@ @C =?<GFA =C@ C@= C@C A1
F@ ? A?;=?E F@ =@E A F@ @C<A1 F@ > =CE =? A1 F=
? A? F= F@F=E AE>@E : _?F@ I=?<=?E DCAE @E F@
C@ @D ?b @ A? F@ I=?<1 C? F@E G@@< = A ? F@GT
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ROB /) ; 49 .YE 9/ <44/( )+&2()/:+112<'4+3*/(/1/ "4
1+=/:2/=' 24 =4+4/2(=9/7 79/49/(49/ "5B /) 22:# .DH /
': 14; /'4 7+= &2(&/*2'# 2(; =:/P 49=1+=/2''249/("2 '4=' !'' YEM
; /+'2(? 3<4 4 ;)94 7/** 9+J/3//''&2(

G ' Fp' ? A?';' =?E' A?' F@' J AC? ?>' F@'C@ @ D 'G= ' > B@?' A' F@'
@ <' I ' F@'DC A?@C% F@' @C<' F=E' DC@B A 'C@ @ B@E' 1CA J' F@'
I=?<' F@' G@@< ' = A ?% GF F' F@G@E' F= ' F@' DC A?@C' F=E'
AE>@E' A? ' ?' F@' I=?<';' F@'DC A?@C' F=E' ?' 1= ' A? ' AE>@E'
:_% =?E' GF@?' F'' C@ @ D ' @1 ' F@' I=?<' 'G= ' =' C@ @ D '1AC' F= '
J' A? % I ' F@' ?' F@' J =C> ?' F=E' I@@?' = @C@E' A' : % =?E'
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J =<@' F@' A = ' : _' ? @=E' A1' ' AC' F@' DC A?@C' ' G= '
DCAB@E' F= ' FN4'DC= @' F=ZZ' = G= ' I@@?' A' > B@' F@ ' A @ AC '
C@E '1AC' F@' I=?<' = A ? % =?E' F= ' F@'C@ @ D ' G@C@' ?@B@C' C@T
1@CC@E' A' ' G= ' AIZ@ @E' F= ' = ' F@' DC A?@C' A E' A? '>@ '
C@E '1AC' F@' J ' = @E' ?' F@' = A ? % =?E' ?A '1AC' F@' = J A ?'
A1' F@'C@ @ D % ' G= ' ?A ' =' C@ @ D ' G F ?' F@' = @% =?E' F= '
= ' F@'C@ @ D 'G= ' ?A ' = @C@E' ?' F@' IAE % 'G= ' ' =' C@ @ D '
1AC' 1A C' DA ?E ';' I % A?' =' = @' C@ @CB@E% ' G= ' F@ E' F= ' F@'
C@ @ D 'G= ' =?' = A ? =I @'C@ @ D ' G F ?' F@' = @% =?E' F= ' F@'
=J A ?' ?' 1 > C@ % ?' F@' AC?@C' A1' F@'C@ @ D % G= ' =' J = @C = 'D=C '
A1' F@' EA J@? % =?E' F@' = @C= A?' ?' F@ J 'G= ' =' 1AC>@C ' N d
?' F@' 1A AG ?>' = @' F@'DA ? ' =CA @' = ' A' F@' ?@ @ =C ' =B@CT
J@? ' ?' F@' ?E J@? 'A1' F@' ? C J@? ' ?' b @ A?' D CDAC ?>'
A' I@ =?E' I@ ?>' =' C@ @ D % GF@C@' ' E E' ?A ' ?@ @ =C ' D CDAC ' A'
I@' F' A?' F@' 1= @' A1' ' F@' ?E J@? ' F=C>@E' F= ' F@' DC T
A?@C' F=E' ?' F ' DA @ A?' =' @C = ?' ?=B I ' NGF F' G= ' @ '1AC F'
= ACE ?>' A' ' @?AC' =?E' @11@ d% ?E@C' GF F' ?=B I ' F@C@' G= '
A? = ?@E' =' @C ' ?' ACE@C' ?' GC ?>' 1AC' D= J@? % = @E' =?' = >?T
J@? % , % =?E' DA?' GF F' F@C@' G= ' A? = ?@E' =' @C = ?' ?EAC @T
J@? % D=C ' DC ? @E' =?E' D=C ' GC @?% I 'A?@' & J ' # =B % F @1'
@C<' A' F@' AJD CA @C'A1' F ' * =Z@ H' ?=B % ?' F ' A11 @@% 1AC' I '
=?E' = A ? % A' F@' 1A AG ?>' @?AC' =?E' @11@ '$ 7 F@' @C 1 = @'
G F ?' J@? A?@E' ' ?EAC @E' I ' EG=CE' & A?% D= =I @' A'
*C ' & J ' FAC? A?';' ' # =B '$H =?E' F= ' F@' DC A?@C' 1AC>@E% , %
=' @C = ?' C@ @ D '1AC' ? A?@ % A' G % 1AC' F@' J' A1' -8_' J@? A?@E'
=?E' A? = ?@E' ?' F@' = E' '=D@C% , % = @E' =' ?=B I % GF F'
1AC>@E' C@ @ D 'G= ' = ' 1A AG ';' F= ' ' A' = ` 7 & J ' FAC? A?%H
7 & C=' ? @C';H G F' ? @? A?' A' E@1C= E' F@' < ?> ' ' @ A?E'
A ?' = @E' F@' ?=B I % F@' ACE@C' 1AC' D= J@? ' =?E' ?EAC @T
J@? % = ' ?' F@'1 C ' A ?';' =?E' F@?' = @E% F= ' A' F@' = E' = '
J@? A?@E' ?=B I ' G= ' =??@]@E' =?E' GC @?' =' @C = ?' 1= @%'
1AC>@E% % C@ @ D '1AC' J A?@ % A' G % 1AC' F@' J' A1' -8Ff' ?' F@'
= E' = <J@? A?@E' D=D@C% = @E' =' ?=B I ';' GF F' = E' 1= @%'
1AC>@E% , % C@ @ D ' 1AC' J A?@ ' G= ' = ' 1A AG '$ F= ' ' A' = '"
7 & J ' FAC? A?%H 7 & J ' ? @C';H =?E' F= ' F@' DC A?@C' <?AG ?> '
@C@E' F@' = E' = J@? A?@E' 1AC>@E% , % C@ @ D ' 1AC' J A?@ %'
G F' ? @? ' A' E@1C= E' F@' < ?> ' F@C' A ? % ?@=C ' J =C%'
F=C>@E' F@! ? C J@? '1AC>@E' A' I@' =?' 6 >! 6 'G' =?E' A J @' A1'
F@' A ? ' = @E' F@' ? @? A?' A' I@' A' E@1C= E' & J ' FAC? A?'
=?E' A F@C' D@C A? ' ' =DD@=C@E' F= ' EG!=CE' & A?% GFA' F=E'
I@@?' D A ' A1' F@' ACE' * >C=B@% F=G ?>' C@ @ B@E' 1CA J ' F '
=D = ?' =' @C 1 = @' A1' F ' @CB @% @?' ' A' & J ' FAC? A?% A'
C@ @ B@' F 'G=>@ ' F@' DC A?@C' G= ' ' @C<' ?' F@' AJD CA @CH'
A11 @;' =?E% I@ ?>! @JD A @E' A' 1ACG=CE' F@' D A H' I ' FCA >F'
F@' A11 @% >A ' ? A' F ' F=?E ' F@' I ' = @E' ?' F@' ?E J@? % =?E

9f' ; /(f' =) ' ') 1/(4+ '' '+ ; /= 42' +'' +==) ' ; / '4' &2(' "+# ; / '4' 2&' +' =< ; ' 9' +' '+J# ' 3 ** :2/=' '24' < '*/=' 12' ' /1P 4/ :' 7 49' 249/(' &+14=' "<("2(4' 2 '' 49f' &+1f' 2&' 49f' 7 (4 ') 42' 3f' +' :' (/1/ "4 ? +' :' 4' =92<*: ' 49/((/ 2(/ ' 3f' +J/((/ :' 49+4' 49f' '+J# 3 **' 1 ' 42) /49/(' 7 49' 49f' =)P '+4<(/=' h* * "<("2(4' 42' 3f' +' :' 7+=' +' (/1/ "4

W(f /) ' , ' 29 '=42 ' ' A' 2V' ' ' .HH

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word 'settled.' It was further urged, that if the word 'settled' had any definite meaning, it meant a receipt, as was held in *Spamforth, q. t.* v. *Alexander*, (*c*) and as the legislature must be taken to have meant different things by the words 'receipt' and 'acquittance,' the Court could not say that it was an acquittance. But, upon a case reserved, the judges were unanimously of opinion that the count was good. (*d*)

An indictment for forging the following receipt, '16*l.* 15*s.* 6*d.*, for the high constable, J. Hughes,' does not require explanatory averments.

The indictment charged the prisoner with forging a certain receipt for the payment of money, in form following (that is to say):—

'6th January, 1830.

'£16 : 15 : 6

'For the High Constable,

'JAMES HUGHES'—

with intent to defraud J. Grundy. It was objected that the document set out was not on the face of it necessarily 'a receipt for the payment of money.' The words were in themselves quite ambiguous, and might as well be construed to import that Hughes had paid money for the high constable, as that he had received it for him; neither was it to be deemed a receipt because the prosecutor had called it by that name in the indictment. He should have gone further, and explained by reference to the other documents, or to the course of business, how the instrument, in itself ambiguous, came to have the effect of a receipt. (*e*) Alderson, B., 'the cases cited are clearly distinguishable from the present. In *Hunter's case*, the forgery consisted in merely counterfeiting the signature of the party, which, of course, meant nothing without reference to other documents. In *Thompson's case*, the forgery consisted in writing the word 'settled' on an account; that, also, was an expression in itself entirely ambiguous: it might mean either that the party was satisfied as to the correctness of the items, or that he had received the amount. But, indeed, that case has been expressly overruled by *Rex* v. *Martin*. I think there is nothing in the objection.' (*f*)

The word 'paid' at the bottom of a bill imports a receipt or acquittance for money.

So where on an indictment for forging and uttering an acquittance and receipt for money, it appeared that the prosecutrix gave the prisoner the bill of a Mr. Sadler, a cheesemonger, with money to pay that bill and a variety of others, and the prisoner brought the bill back again to the prosecutrix, with the words, 'Paid, sadler,' at the bottom of the bill, with a little *s*, and no Christian name, and Sadler proved that he never signed any bills in such manner, with a little *s* and no Christian name, but all his bills had his initials, 'S. Sadler,' to them; it was contended that the words 'Paid, sadler,' did not necessarily import a receipt by Sadler, but they might be a memorandum of the prisoner of her having paid the money to him. But Lord Denman, C. J., in summing up, said, 'You must be satisfied that this was a receipt for money, and I

(*c*) 2 Esp. R. 621.

(*d*) Rex *v.* Martin, R. & M. C. C. R. 483. 7 C. & P. 549. See this case, *ante*, p. 695, as to the description of a receipt under the 2 & 3 Will. 4, c. 123, s. 3, and as to the intent to defraud, *ante*, p. 679. See Thompson's case, 2 Leach, 910.

(*e*) Hunter's case, *ante*, p. 836, Thompson's case, *supra*, and Rex *v.* Barton, *post*, p. 839, were cited.

(*f*) Reg. *v.* Boardman, 2 M. & Rob. 147. 2 Lew. 181.

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Question whether 'settled' purported to be the receipt of the prisoner or of another person.

The prisoner was indicted for uttering a forged receipt for money as stated in some counts, and for uttering a forged acquittance and receipt for money as stated in other counts. The instrument was as follows:—

'Received from
'Mr. Bendon, due to
'Mr. Warman, 17*s.* 0*d.*
'Settelled.'

The prisoner was servant to Mr. Warman, and applied to Bendon's wife for payment of a debt of 17*s.* due to Warman. She refused, unless she had Warman's receipt, and the prisoner went away and returned with the above document; upon which she paid the money. The jury having convicted, upon a case reserved, six of the judges (*k*) thought the conviction good, as the receipt sufficiently appeared to be the receipt of Warman, especially considering the conduct of the prisoner in producing it as such, and if so it was a forgery. The other five judges (*l*) thought it did not purport to be the receipt of Warman, and therefore was no forgery, inasmuch as if it was taken to be the receipt of the prisoner it was no forgery; and that the offence of the prisoner was obtaining money by false pretences. (*m*)

A pay-serjeant of the artillery obtained from the paymaster a receipt for a sum of money as part of subsistence of a company for the month of May. He erased May and inserted June, and gave the receipt to a tradesman, who, according to the usual practice, advanced the sum to the prisoner, and sent the receipt to the agent of the regiment, who paid the amount. An indictment for forgery, describing the instrument as a receipt, was held good.

The prisoner was convicted upon an indictment, which charged that he did feloniously forge a certain receipt for money, which was as follows:—

'Received the 22nd day of May, 1834, of Messrs. Cox and Co., Paymasters, Royal Regiment of Artillery, the sum of £13 sterling, being a part of subsistence for a detachment of Captain Bayley's company, second battalion Royal Artillery at Woolwich, for the month of June, 1834.

'R. M. POULDEN, Lieutenant Royal Artillery'—

with intent to defraud R. H. Cox and others. There was another count for feloniously uttering a like forged receipt for money, knowing it to be forged, and several other counts, upon which no question arose. In May, 1834, Lieutenant Poulden had the charge of a detachment of Captain Bayley's company of the second battalion royal artillery at Woolwich, of which he was also the paymaster; the prisoner was acting under him as pay-serjeant. The following is the mode by which the subsistence money is provided:—The pay-serjeant makes out for the use of the paymaster, at the beginning of every month, an abstract of the subsistence money which will be wanted for the soldiers during the ensuing month, and the paymaster gives information to Messrs. Cox and Greenwood, the agents of the regiment, accordingly. The pay-serjeant, in order to receive this money, brings to the paymaster, about once a week, a receipt, partly printed and partly filled up by himself, in the form above set forth, and upon obtaining the paymaster's signature thereto, he gets cash for it from any of the neighbouring tradesmen, who afterwards either pass it to others or send it up

(*k*) Lord Denman, C. J., Wilde, C. J., Cresswell, J., Erle, J., Platt, B., and Williams, J.

(*l*) Parke, B., Patteson, J., Coltman, J., Rolfe, B., and Wightman, J.

(*m*) Reg. *v.* Inder, 1 Den. C. C. 325, 2 C. & K. 635. The marginal note in Den. C. C. is quite unwarranted by the statement in the body of the report.

out of the money by you collected, or to be collected, for the relief of the poor of your parish; the sum of £3 15*s.* 9*d.*, being the proportion of your said parish, for and towards the general county rate, to be applied for the several purposes mentioned and set forth in the several statutes in such case made and provided, and herein fail not at your peril.

'Given under my hand at Mowley, in the said county, the 6th day of December, 1837.

'Dec. 31. Rec[d]. the above rate. 'J. POWELL.'

'JOHN POWELL, Chief Constable of the Hundred of——.'

And it was proved that Powell, the high constable, had sent the precept for the county rate, which was set forth in the indictment, with the sum of 3*l.* 5*s.* 9*d.*, stated in it as the amount, and that he afterwards received that sum from the prisoner, and then wrote, 'Dec. 31. Received the above rate, J. Powell.' The prisoner afterwards presented the document altered into 3*l.* 15*s.* 9*d.* to the auditor of the Union, and obtained that sum from him. It was objected that this was not a forgery of a receipt, for that the whole receipt was contained in the words, 'Dec. 31. Rec[d]. the above rate, J. Powell,' which was unaltered, and that altering the precept for the rate to which the receipt referred was not a forgery of the receipt. It was answered that the alteration varied the amount for which the receipt was given, and therefore it was a forgery of the receipt: and it was held that it was clearly a forgery of the receipt. (*p*)

A scrip receipt, not filled up with the subscriber's name, is not a receipt for money within the statute.

It has been holden that a *scrip receipt*, not filled up with the name of the subscriber or person from whom the money was received, is not a *receipt for money* within the statutes. The point came on for consideration upon demurrer; and after argument, Grose, J., delivered the opinion of the judges, and said that the instrument, the tenor of which was necessarily set forth in the indictment, was not *a receipt* for money in contemplation of law within the meaning of the 2 Geo. 2, c. 25, &c. That it was the duty of the cashier appointed by the bank to receive such subscriptions to fill up the receipts with the names of the subscribers, or persons from whom they originally received the money; and until the blank left in the printed form was so filled up, the instrument did not become an acknowledgment of payment; or, in other words, a *receipt* for money. While in such a state it was no more a receipt than if the sum professed to be received had been omitted. (*q*)

A scrip certificate in a railway company is not 'an accountable receipt,' or 'an acquittance' or 'receipt.'

In an action for false imprisonment the defendants justified on the ground that the plaintiff had uttered a forged accountable receipt for money, and on the trial the plea was amended by substituting the words 'acquittance or receipt.' The document was as follows:—

(*p*) Reg. *v.* Vaughan, 8 C. & P. 276, Gurney, B. It was also objected that there ought to have been an innuendo that 'Rec[d].' meant 'Received,' but this objection was also overruled.

(*q*) Lyon's case, 2 Leach, 597. 2 East, P. C. c. 19, s. 36, p. 933. And see several points as to the forgery of *scrip receipts* discussed in Reeves's case, 2 Leach, 808, *et seq.*

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the instruments were not receipts at all, either accountable or otherwise. At the time of receiving such instrument the party is in possession of a receipt for the money, and therefore it is presumable that it was not intended as a receipt, but as something else; and if it be contended that it is a second receipt, the form of the instrument negatives that, and shews that it operates quite in a different manner, and was intended so to do. The mere recital in the instrument—that the party had paid *5l.*—cannot make it a receipt. Neither are the instruments undertakings for the payment of money. They are mere contingent undertakings; for it is left in doubt what the party undertaking will do. The nature of the undertaking itself depends on the occurrence of a contingency. On the part of the crown it was contended that the instrument was both a receipt and acquittance. Suppose A. writes to B. offering to make him a present, the offer is intercepted by C., who forges the receipt of B., and presents it to A., who thereupon gives him the present; would not that be forgery? The Act seems to distinguish a receipt from an acquittance. It says, 'receipt *or* acquittance,' and seems to have contemplated some such case of acquittance, where the payment was voluntary, and not merely such receipts as are themselves acquittances. The holder was discharging an obligation when he paid the *5l.*, as there was an agreement that he should do so. The instrument operates as an accountable receipt, being an acknowledgment by the company that they have received *5l.*, and hold it on account of the holder of the scrip. The instrument is also an undertaking for the payment of money. It is an undertaking by the company to pay interest on the shares. If on any contingency the interest might become payable, this is an undertaking within the statute. Afterwards eight of the judges (*ss*) were of opinion that the instrument did not purport to be a receipt *and* acquittance, nor even a receipt within the statute. It was not a receipt in ordinary parlance, nor made with the intent of being such, though it might be used as evidence of the payment of the deposit; but any written paper capable of being so used was not a receipt; as, for instance, a letter written by a landlord to a third person saying that his tenant had duly paid his rent. On the other hand, four judges (*t*) thought that the instrument was on the face of it an acknowledgment of the payment of the deposit, and was therefore a receipt for that sum. Coltman, J., thought it was an undertaking for the payment of money. Lord Denman, C. J., and Wilde, C. J., doubted whether it were so, but gave no opinion; and the rest of the judges were of opinion that it was not. They thought it was only an undertaking to deliver shares bearing interest, not that the interest should be paid; as an undertaking to deliver a bond for the payment of money with interest would be no undertaking for the payment of money. (*u*)

(*ss*) Pollock, C. B., Parke, B., Alderson, B., Coleridge, J., Coltman, J., Maule, J., Rolfe, B., and Williams, J.

(*t*) Lord Denman, C. J., Wilde, C. J., Wightman, J., and Erle, J.

(*u*) Reg. *v.* West, 1 Den. C. C. 258. 2 C. & K. 496. Maule, J., in the course of the argument asked, 'Would it be forgery to write to a man, "Sir—I have to acknowledge the receipt of your obliging letter, and return you many thanks for your kind present of 10*l.*"—would that be an acquittance? No; for the giver is quit before he gives the present. There

that he, and not the navy-board, was answerable to them. That, therefore, the board had nothing to do with these receipts; and it was indifferent to the board whether these sums had been paid to these several persons or not. The prisoner having been convicted, the case was submitted to the consideration of the twelve judges, who all (with the exception of Lawrence, J., who was absent), held that the conviction was right, and that the receipts, as stated, were within the statute. Grose, J., in delivering their opinion, said, 'The facts in the case prove that these receipts were forged; and that they purported to have been given to Collinridge by workmen for monies paid by him to them for work done *for the commissioners of the navy-board*. The persons, therefore, employed for that purpose by *him*, were employed not solely on his account, but on account of the King; and these receipts, if genuine, would have been legal vouchers for his account, and would have entitled him to a discharge from the navy-board. It is clear then, from the facts proved at the trial, and from the verdict of the jury, that these receipts are forged receipts, and that they were knowingly uttered by the prisoner with intent to defraud the King.' (*y*)

Forging a receipt in order to found a claim of payment thereon against a third person, is as much within the statute as forging it to defeat a claim by the person whose name is forged.

In the foregoing case a point arose as to the right of the prisoner to put the prosecutor to his election, on an indictment stating various forgeries. The first count of the indictment charged that the prisoner uttered, &c., a certain forged acquittance and receipt for money (setting it forth), also a certain other forged acquittance and receipt for money (also setting it forth), and stated in like manner above twenty other receipts of different dates, for different sums, and purporting to be signed by different persons, with intent to defraud the King. And before any witnesses had been examined, the counsel for the prisoner submitted to the Court whether the prosecutor ought not, under the circumstances of this case, to elect on which of the several receipts stated in the first count of the indictment he intended to proceed, and be restrained from proceeding on more than one of them; as, amidst such a variety, it would otherwise be almost impossible for the prisoner to conduct his defence. But Le Blanc, J., referred to the indictment, by which it appeared that all the receipts stated in the first count were charged to have been *uttered at one and the same time;* and as this single act of uttering the receipts would, if clearly proved, constitute only one offence of *uttering*, he refused the application. The proof was, that the several receipts stated in the indictment were uttered at the same time in one bundle, given by the prisoner to the solicitor of the navy-board. And when the case was submitted to the consideration of the twelve judges, they were all of opinion that the application to put the prosecutor to his election was properly refused. (*z*)

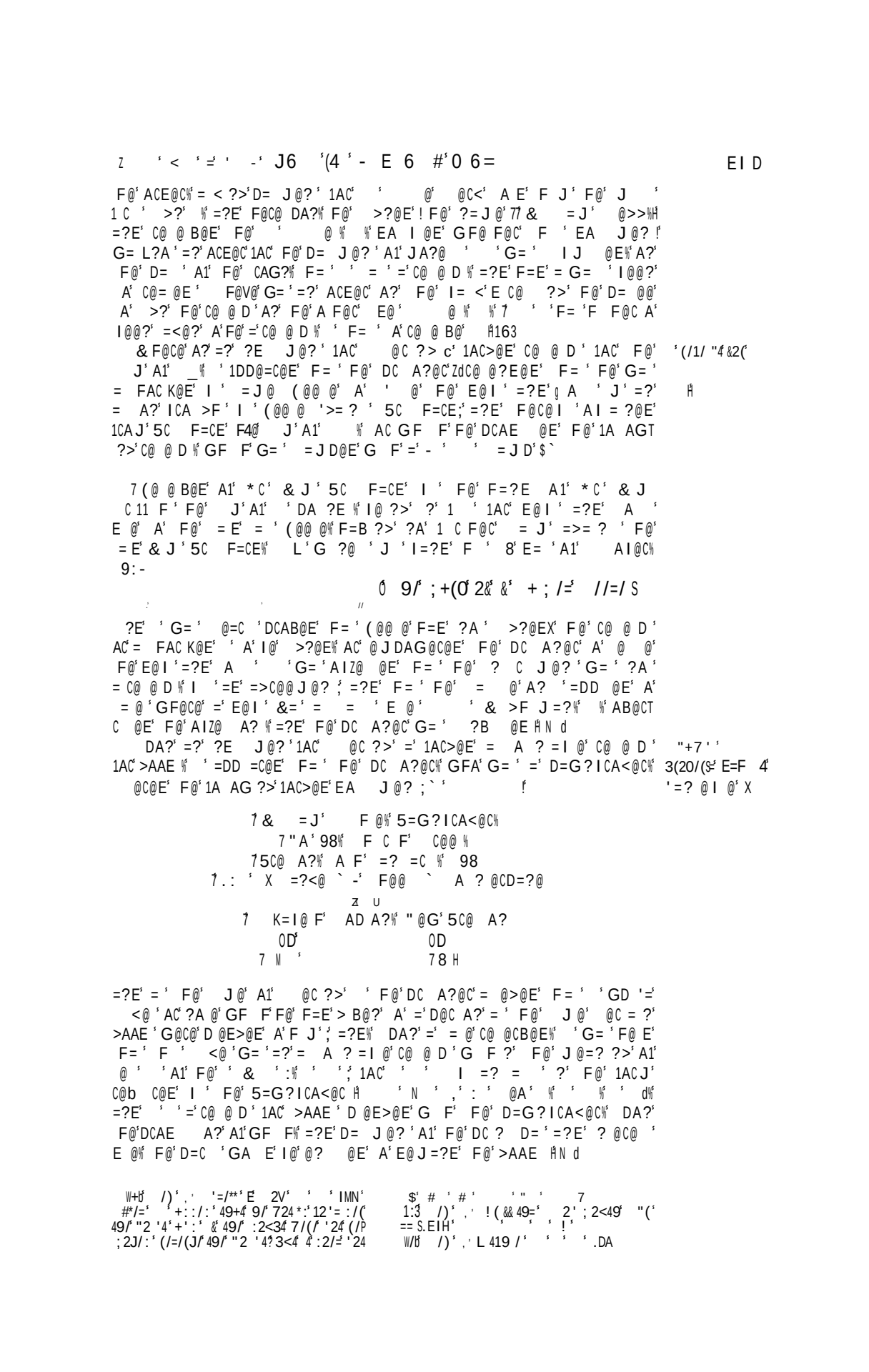
As to the right of the prisoner to put the prosecutor to his election, on an indictment stating various forgeries.

The prisoner was indicted for forging a receipt with intent to defraud W. Clegg. Clegg's mother had sent a post-office order for 1*l.* to him at Portsmouth, and this letter, after having been left in Clegg's room, had been abstracted by some one; and the same day the prisoner went to the post-office, and there produced

A signature to a post-office order or receipt seems to be a receipt.

(*y*) Thomas's case, 2 Leach, 877. 2 East, P. C. c. 19, s. 36, p. 934. And see Jones's case, *ante*, p. 706.

(*z*) 2 Leach, 882.



A signature of a witness on an order for costs in a prosecution is not a receipt, where it is written in order to enable the person presenting the order to receive the money ordered to be paid.

The prisoner was indicted for forging an acquittance and receipt for money, and it appeared that the prisoner was clerk to an attorney who had been employed by W. Ryder to prosecute J. Ash for perjury. Ash was tried for perjury at the Stafford Summer Assizes, 1845, and an order made for the payment of the costs of the prosecution on the treasurer of the county. This order was in the usual form, directing a certain sum to be paid to the prosecutor and each of the witnesses respectively. The practice of the county treasurer was to pay the whole amount of such an order to the attorney for the prosecution, or his clerk; but he required the signature of every person named in the order to be written on the back of the order, and opposite each name the sum ordered to be paid to each person respectively; but the treasurer did not make any inquiry, or take any step to ascertain whether the different persons had actually received the sums set against their names. The prisoner took the order to the treasurer's office, having obtained the signatures of W. Ryder, the prosecutor, and all the witnesses except three, and on behalf of these three witnesses the prosecutor had signed his name, and the indorsement at the back of the order when first presented to the treasurer was as follows:—

	£	s.	d.
'William Ryder	24	11	6
'George Keates	2	13	4
'Joseph Perkin	2	13	4
'Samuel Shellard	2	14	8
'Jane Vickerstaff	2	14	8
'William Bransfield	3	0	0
'James Brentnall	1	10	0
'Thomas Hodgkinson	1	10	0
'For John Cliff, James Oakes, and Thomas Hope 'William Ryder	6	10	8
	49	8	2'

The treasurer's clerk objected to pay the amount, and required the actual signatures of the three witnesses, and having drawn his pen across their names, he gave back the order to the prisoner, who took it away, and brought it back; and the order, as he then presented it, appeared to have the signatures of the three witnesses, thus:—

	£	s.	d.
'James Oakes	1	10	0
'John Cliff	3	10	8
'Thomas Hope	1	10	0'

The treasurer's clerk then paid the prisoner 49*l.* 8*s.* 2*d.*; and the prisoner wrote 'C. J. Parker, for T. Cooper,' under the indorsements on the back of the order. The name James Oakes was not written by him or by his authority. It was objected that this signature on the back of the order was neither a receipt nor acquittance. The 7 Geo. 4, c. 64, s. 24, required the treasurer to pay

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" B' E' +=4' 'M' 1' .N' =' ED' "' NEY' /)' ' /742 ' G' 22' M' ' ' AN' .' "' EYH W2& 419/**$=' 1+=/' 2=4' ..N' G' +=4' ' M' .N' =' HD' "' NHY

" B' ** + ; S=' 1+=/' .' /+19' ..I' G' +=4' ' ' 1' .N' =' HD' "' NHD' **/(S=' 1+=/' G' +=4' ' ' 1' .N' =' HD' "' NHE' .' /+19' HGH

@C ' A1' F@' D=C F' AC' D = @' A' GFAJ%' I ' F=' = @%'='Z @' A1'
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1AC>@E' G=?H=? % AC' ACE@C' 1AC' F@' E@ B@C ' A1' F@' >AAE % J ' D CDAC ' A' I@' F@' ACE@C' A1' F@' AG?@C% AC' A1' AJ@' D@C A?' GFA' F= % AC' = ' @= ' = J % =?' ? @C@ ' ?% AC' GFA' F= % AC' = ' @= ' = J @ ' A' F=B@% =' E DA ?>' DAG@C' AB@C' F@' >AAE % =?E' =<@ ' DA?' F J ' A' C=? 1@C' F@' DCAD@C ' AC' ' AE ' A1' F ' J ' A' F@' D@C A?' ?' GFA @' 1=BA C' F' ACE@C' 7J=E@ H ?E% = ' A' F@' 1AC J ' A1' F@' ?E J @? % F@' = E% !' F= ' ' A >F ' A' F=B@' =DD@=C@E' ?' F@' ?E J @? ' F= ' F@' D@C A?%!GFA @' ?=J @' G= ' I C I@E' A' F@' ACE@C% F=E' =?' = FAT C ' A' J =<@' { ' ; I ' F= ' F ' A E' ?A ' I@' A @ @E' I ' =? ' @>= ' ?1@C@? @' 1CAJ' F@' GE E ' A1' F@' ?: J @? ' ; 1AC' ' # % F@' D@C A?' GFA @' ?=J @' G= ' 1AC>@E% G= ' = @E' A' I@' F@' " 6 ' A1' F@' AG?@C% GF F' ' @] E@E' @B@C ' E@=' F= ' F@' F=E' AC' A E' = J ' =? ' ? @C@ ' ?' F@' >AAE ' GF F' G@C@' F@' IZ@ ' A1' F@' ACE@C% =?E' F= ' ' A >F ' A' F=B@' I@@?' @] DC@ ' =B@CC@E' F= ' F@' F=E' = FAC ' A' J =<@' H "B

?' F@' 1AC@>A ?>' = @' !& = ' 1 C F@C' AIZ@ @E% A?' I@F= 1' A1' F@' DC A?@C% F= ' F@' ? C J @? ' ?' b @ A?' G= ' ?A ' =?' ACE@C% F ' =' F=C@' C@b @ ' ; F= ' ' G= ' ?A ' E C@ @E' A' =? ' D@C A?% =?E' A? @T b @? ' G= ' ?A % DA?' F@' 1= @' A1' % AJD AC ' DA?' F@' FA E@C' A1' F@' >AAE '$ =?E% 1 C F@C% F= ' ' A >F ' A' F=B@' =DD@=C@E' A?' F@' 1= @' A1' F@' ?E J @? ' F= ' F@' ACE@C' G= ' A' F@' FA E@C' A1' F@' >AAE % 7>3' DA?' F@ @' DA ? ' F@' @=C?@E' Z E>@% GFA' E@ B@C@E' F@' AD ? A?' A1' F@' Z E>@ % = E% ! F= ' F@' ACE@C' J ' I@' E C@ @E' A' F@' FA E@C' AC' D@C A?' ? @C@ @E' ?' AC' F=B ?>' DA @ A?' A1' F@' >AAE ;' F= ' Fb' ACE@C' @ ' 1AC F' ?' F@' ?E J @? ' G= ' ?A ' E C@ @E' A' =? ' D@C A?' GF= A@B@C% I ' J @C@ ' @] DC@ @E' =' E@ C@' F= ' ' I ' A1' <' FA E' I@' E@ B@C@E' A' F@' I@=C@C' A1' ' G FA ' =? ' E C@ A?' 1CAJ' GFA J ' ' G= ' A' I@' C@ @ B@E' ; =?E' F= ' A?' F ' >CA ?E% F@C@T 1AC@% F@' Z E>@ ' G@C@' A1' AD ? A?' F= ' F ' G= ' ?A ' =' G=CC=? ' AC' ACE@C' G F ?' F ' = @ H 1 3

' GF@C@' A?' =?' ?E J @? ' 1AC' 1AC> ?>' =?' ACE@C' 1AC' D= J @? ' A1' JA?@Z ' =DD@=C@E' F= ' F@' DC A?@C' = @E' = ' F@' I=?<' A1' * @ C ' @] =?E@C% GF@C@' *C ' (=J @ ' <@D ' =?' = A ? % =?E' = E' F= ' F@' F=E' = @E' 1AC' 9 ' GF F' F@' F=E' E@DA @E' G F' *C ' (=J @ ' ' F@' @C<' A E' F@?' F= ' F@' A E' ?A ' D= ' F@C' G FA ' =?' ACE@C' F@' ?@V; ' E= ' F@' =J @' =>= ?% =?E' F=?E@E' A' F@' = F @C' =' 1AC>@E' D=D@C' = ' 1A AG ' $ `

7 A A?% * = H' % 98

7 C % ` 5 @= ' A' D= ' F@' @=C % *C ' J =C % F@' J ' A1' = >F ' ?EC@E' =?E' 8 ' : ; ' @?' F ?> ' 1AC' J @%

G8 ' ; 0

F ' D=D@C' G= ' 1A E@E' ?' F@' F=D@' A1' =' @ @C% =?E' =EEC@ @E' A T E@% 7 * C ' J =C H F@' = F @C' = <@E' F@' DC A?@C' 1' F@C' ?=J @' G= ' J =C ' ; F@' = E' 7) @ H @' F@?' = <@E' F@C' 1' F@' F=E' @@?' *C ' (=J @ ' GC @' F@' ACE@C' $ F@' = E' 7 " A' ; F@' F=?E@E' ' A' F@C H F@' = F @C' E E' ?A ' D= ' F@' JA?@ ' @' = E' F= ' 1' F@' F=E' @@?

" B * '19S=1+=/ ' G +=4' ' ' / ' .N' =' HD' "' NHE' .' /+19' AIM' ' :' =// /V ' *12V' ' ' ' AM' .' "' YNN' ' :' 4' =// ; =' 49/(/&2(/' 49+4' &' 49/' ' P : 14 ; / '4' =4+4/=' 49/' "' /(=2 '' '' 792=/' ' + ; /' 49/' 2(: /(' 7+=' &2() / :' 42' 9+J/' 3// '' =/(J+' 4' 42' ' ' + ' :' 49+4' 49/' 2(: /(' 7+=' &2(' 49/' : /* J/(# 2&)22 :=' 42' ' ' 4' 2<) 94' 42

=9/ 7' 49+4' 49/' =/(J+' 4' +=' =<19' 9+ :' +' : =P "2= ')' "27/(' 2J/(' 49/')22 :=' ' ' +#' */#' W7U 9/' &2(; ' 2& 49/' ' =4(< ; / '4' 7+=h 0 */+=/' 42' =/ ' :' 3# 49/' 3/+(/(' E.3' 2& 49+4' 792("/' 9<' ' ; +(0/4

WJU * '19S=1+=/ ' .' '24/' Wh

4' &2(P ; /(*# 9/' :' 49+4' 49/' 2(: /(; <=4' 9/' : P (/14/ :' 42' 49/' 92* : /(' 2("/(=2 '' 4/P (/=4/ :' ' ' 2(9+J ')' "2=P =/== 2 '' 2&' 49/')22 :=

' '=4(< ; / '4' '24' + : : (/==/ :' 42' + ' # 2 ' /' 3# ' + ; /' ; +# 9/' =927 '' 3# /J P : / ' 1/' 42' 9/' ' 4/ ' : / :' &2(' + "+(4 1<*+(' "/(=2 ' ' + ' :' ; +# 49<=' 3/' "(2J/ :' 42' 3/' + '' 2(: /(' &2(' 49/' "+# ; / '4' 2& ; 2 ' /#

* C (= J @ G C @ AC F=E <?AG? F= G= F GC ?> F@ FA E F=B@ C@= @E = =?' ACE@C =?E F=B@ D= E F@ JA?@ = T FA >F G= ?A =EEC@ @E A * @ C @]=?E@C DA?' =' = @ C@ @CB@E DA?' F@ b @ A?' GF@ F@C F@' D=D@C =IAB@' @ 1AC F' Q= ?E@C F@' C J =? @ =?' ACE@C 'DC F@' D= J @? 'A1' JA?@ G F ?' F@' = @ G= F@ E F= G= DDA ?> F@71= A F=B@ I@@?' C @ =?E' F@' ? C J @? A' F=B@' I@@?' >@? ?@ GA E' F=B@ I@@?' F' =?' ACE@C' = 1' D= E GA E' F=B@' C@ @B@E' F@' I=?<@C 1CA J' =? 1 C F@C' E@ J =?E' 1AC' F@' JA?@ A' D= E 1= DD ! F@' G=? A1' =' 1AC J = ' E C@ A?' A' ?V I=?<@C' DDA @' (=J @ F=E' A E' F@' DC A?@C' A'>A' A' F@' I=?<=?E' F= F@' F=E' I@@?' A E F= F@ GA E' ?A D= F@C' G FA =?' ACE@C =Z E' F= F@' =J@ I= <' F@' ?@] E= G F' F EA J@? 1CA J' (=J @ GA E' F@?' F=B@' I@@?' =' >AAE' ACE@C H 153

<4 &' 49/' 2(:/("<("2(4 42' 3/' 2' /' 79 19' 49/' "+(4# 9+=' +' ( )9 42' ; +9/' 4' 7 *# 3/' 7 49 '' 49/' 14

' &2()/:' 2(:/(2 '' +' 3+'0/(' 92*:/ '' 42' 3/' 7 49 '' 49/' =4+4<4/ -' 492<)9' ; +:/' '' +' & 14 4 2<=' '+ ; /' +=' 4' "<("2(4/ :' 42' 3/' ; +:/' 3# -' "/(=2 '' 792' 0/"4 1+=9' 7 46' =<19' 3+'0/([

'&2(; +* 19/T</

FA E' ' ' ' /** ') ' /+(=^' ' ' H.N ' .DE /V ' * '19' :' 7+=' : =4 ')< =9/ :' 2 '' 49/')(2<' :' 49+4' 49/' +J/(; / '4=' '' 49/' ' : 14 ; / '4' '' 49+4' 1+=/' 7/(/' '=<&& 1 / '4' <4' '' 49 =' 1+=/' 49/' /J : / '1/' =<" /:' +** 49+4' 7+=' ' /1/==+(#' 9 =' 1+=/' =7/ ; =' 42' 2J/((<*/' /) ' &' / ' '#' .' 2V 'M

ĐOB' G +=4' ' '1' .N' =' HE' "' NIM 1'3 210/44S' 1+=/' .' /+19' NI' G ' : 14 ; / '4' '' 49+4' 1+=/' 7/(/' '=<&& 1 / '4' +=4' ' '1' .N' =' HE' "' NIM' ' ' <4' '' 49 =' 1+=/' 49/' /J : / '1/' =<" /:' +** '' 3(+9+ ; S' 1+=/' G' +=4' ' '1' .N' 49+4' 7+=' ' /1/==+(#' 9 =' 1+=/' =7/ ; =' 42' =' HE' "' NI.

W7H' /) ' ' ' /** ') ' /+(=^' ' ' H.N ' .DE

7 "A' 7 5=<@?F=J @D ' - 9: ' 7 * @ C ' =<@ @B=?' * AAC ,' @B=?' =?<@C 7 C ' ' EJ ?E 7 5= ' * C' =C<@' @B@? @@?' AC' I@=C@C' DA ?E @ @B@?' F ?> 7 i .' ' 7(' (& 0

' G= ' AIZ@ @E' F= ' F ' EA J@? ' G= ' ?A ' =?' ACE@C' 1AC' F@' D= T J@? ' A1' JA?@ ' 5A A <' ' ' 7 F ' C@ ' ' =?' ACE@C' GF F

1 ' ' ' d " ' ' 6 ' P EAD

1' >@? ?@%' F@' EC=G@C' G E' I@' AI >@E' A' D= ' 1' F@' I=?<' F=E'
C@1 @E' D= J@? ' ' ' ?A ' F@' @ ' =?' ACE@C' 1AC' F@' D= J@?'
A1' JA?@ ' G FZ?' F@' = @' I@ = @' F@' GACE ' F=B@' I@@?' C=? '
DA RE H 783' (' ' Y

F@' ?E J@?' F=C>@E' F'' DC A?@C' G F' 1AC> ?>' =' @C = ?'
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'0 'B (') !4

' (' 92 ; +=
7 % `) A ' G! 4D @= @' A' D= ' F@' I@=C@C%' 1AC' (F=CE' +
5AG@C%' FC@@' DA ?E ' 1AC' FC@@' G@@< ' E @' A' F J %' =' A ? C '
J@J I@C%' =?E' A 'G! ' J F' AI >@' A C %' ,
S' R ÁC&' ? . ' 3!
7W :'- % 9- ' -%' "4 &(' >! #! 2 '0 6 <4E '0 "
7 A' * C' FAJ= %' C= H' ??' =?@%H

* f 2(: /(19+()/ :' +=' &2()/ :' <)9% 42' ; "2(4 49+4 49/' "+(4# ; +0 ')' 4' 9+=' + : ="2= ')' "27/(' 2J/(' 49/' =<36/14' 2& 49/' 2(: /(' 2(49/(/' 2<) 9% 42' 3/' "(22& 49+4' 49/' "/(=2 '' " J9J=/' '+ ; /' 4' =' ; +: /' 9+ :' /<19' "2 /(

G F' ? @? ' A' E@1C= E' AF?' FAJ= %' F@' = E' ' FAJ= %' A?' GFAJ %'
F@' = E' 1= @%' 1AC>@E%' =?E' A ? @C1@ @E' ACE@C' 1AC' D= J@?' A1'
JA?@ 'G= ' J=E@%' F@?' =?E' F@C@' I@ ?>' ? C @E' G F%' =?E' F=B ?>'
?' F ' F=?E ' =?E' DA @ A?%' = ' F@' =?E ACE' A1' =' @C = ?' D I '
FA @%' <?AG?' I ' F@' ?= J@' A1' F@' !' CAG?' =?E' =C @ ' * AG%H ?'
C= H' ??' =?@%' =' @C = ?' =C>@' J' A1' JA?@ %' A' G %' F@' J' A1'
F C 'DA ?E %' I@ A?> ?>' A' & ' C@ =?E' =?E' A F@C %' J@J I@C ' A1' ='
C @?E ' A @ ' = @E' F@' ' ??H' ? A?%' J@@ ?>' = ' F@' = E'
D I FA @%' 1AC' F@' D CDA @' A1' @?=I ?>' F@' = E' %' FAJ=>' A'
D= %' =?E' F= ' F@' J >F ' D= ' = ' ACE@C ' 1AC' D= J@?' A1' JA?@ 'E @'
A' =? ' A1' F@' J@J I@C ' A1' F@' = E' A @ %' = ACE ?>' A' F@' C @ '
=?E' C@> = A? ' F@C@A1' @ A?E' A ? ' 1AC' @C ?>' =' <@' AHE@C' 1AC'
D= J@?' A1' JA?@ %' G@ ' <?AG ?>' F@' = J@' A' I@' 1AC>@E%' G F'
? @? ' A' E@1C= E' F@' = E' ' FAJ= ' F CE' = J@' = ' @ A?E%' G F'
? @? ' A' E@1C= ' ' @ G <' A C F' = J@%' G F' ? @? ' A' E 4'
1C= E' & ' C@ =?E' =?E' A F@C ' ' FAJ= ' G= ' F@' =?E ACE' A1' F@'
=C @ ' * AG%' C= H' ??' =?@ ' ' A @ ' = @E' F@' 7 ' ??H'
C @?E ' A @ %H G= ' FA E@?' = ' F ' FA @%' A1' GF F' * C' @ G <'
G= ' F@' @ C@ =C $' F@C@' G= ' = ' JA?@ ' ?' FAJ= H' F=?E '
A' D= ' =? ' E@J=?E4' F= ' J >F ' I@' J=E@' I ' * C' @ GE <H' ACE@C '
?' = CE= %' F@' - ' @IC =C %' F@' DC A?@C' DCAE @E' =' F@b @'
A' FAJ= %' = ' F ' FA @%' =?E' = E' F@' ICA >F ' '1CAJ' * C' @ G <'
1AC' FC@@' DA ?E %' 1AC' =' A ? C ' J@J I@C' GFA' F=E' ICA<@?' F ' =CJ '
DA?' AA< ?>' = ' ' FAJ= ' =G' ' G= ' ?A ' * C' @ G <H' F=?ET
GC ?>%' =?E' A E' F J' A' @' = E' F@' <?@G' F = ;' F= ' * C'
@ G <% I@ ?>' =?' ?E@C =<@C%' G= ' A ' A1' AG?' = ' =' 1 ?@C= %' =DE'
* C %' @ G <' E C@ @E' F@C' A?' A' GC @' ' FAJ= ' = ACE ?> '
>=B@' F J' F@' FC@@' DA ?E ' * C' @ G <' DCAB@E' F= ' F@' F=?ET
GC ?>' A' F@' F@b @' G= ' ?A ' F %' =?E' F= ' F@C@' G= ' ?A' J@J I@C'
A1' F@' ?= J@' A1' (' 5AG@C' ?' F@' A @ ' ?' F@' - ' A1' @IC =C '
@ G <' B@E' = ' "A' -%' CAG?H' E ?> %' =?FAD@ C@@ %' =C@ '
J =C<@ ' 'G= ' DCAB@E' F= ' ?A' = FAC 'G= '> B@?' A' =? ' A?@' A'
GC @' AC' @' F@' F@b @%' =?E' F= ' 'G= '?A ' GC @?' I ' @ G <H'
A?' & ' C@ =?E ' = E' F@' G= ' =' J@J I@C' A1' F@' ' ??H' A @ '
N F@C@' G@C@' J =? ' A F@C' J@J I@C d%' F= ' F@' I C I@E' A' F@'1 ?E '
A1' ; 1' =<@?' %' =' J@J I@C' C@ @ B@E' JA?@ '1CAJ' F@'1 ?E 'A1' F@

N d' /)' ' 2(/9+ ; 'G' 2V' ' '.EN' /)' ' +(4*/44' G' ' ' 23' HYG
1 4/ :' '' =<"" "2(4' 2& 49/' 236/14' 2'

% A @ ' A' DDAC'F J ' F@C@'G@C@'?A'C @ 'AC'C@> = A? 'D ' %
AC' =? ' @B E@? @' A1' F@ C' F=B ?>' I@@?' @?CA @E ' F@' 6@ ACE@C'
>>@ @E' F= %' DA?' F@'= FAC 'A1' ! < P' 6 'N=d' F@' DC T
A?@C'A >F ' A' I@'= b @E%'='1AC'G=?'A1' F@'C @ '=?E'C@> = DA? %
A1' GF F' ?A' D= !A ' @B E@? @' A E' A@'> B@?%' F@C@'G= '?A' @B E@? @'
A' DCAB@' F= ' @ G <'F=E'=? 'E DA ?>' DAG@C'AB@ 4 F@' JA?@ ' ?'
F@' F=?E ' A1' FAJ= ' @E= @%' D ' =?E' = @ @%' %' FAG@B@C%'
FA >F ' F@' I@ @C'G= 'G=' A' @=B@' F@' = @' A' F@'Z C %'=?E'C@T
@CB@' F@'DA ? ' >>@ @E1AC' F@' A? E@C= A?'A1' ZŽZ@'Z E>@ %' 1' F@'
DC A?@C' FA E' I@' A?B @E' F@'Z 11 '1A ?E' F@' DC A?@C'> '
A?' F@' A ? '1AC' @C ?>%'=?E%' DA?'=' = @'C@ @CB@E%'= ' F@'Z E>@ '
N@] @D ' = @ @@%' %' =?E'5=C<@%' d' FA >F ' F=NZ' F 'G= ' ?A' ='?'
ACE@C' A?' F@' 1= @' A1' %' =?E' F= ' F@' A?B A?' G= ' F@C@1AC@'
GCA?>%' 1:3

'EA J@?'
J= 'I@ = '
ACE@C' FA >F
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F@'DC A?@C'G= ' ?E @E' 1AC'1AC> ?>' =?' ACE@C'1AC' F@'D= J@?'
A1' JA?@ %' G!F F'G= ' = '1A AG '$ `

7 FAC? A? @ * AAC%' '- %' 9::
!* @' AF? A?% ` C% ` 5 @= @' A' D= ' ?@ ' = < A?' F@' J'A1'
S ' I ' ACE@C' A1' FC ADF@C' =E @C%' FAC? A? @ * AAC%' IC@G@ H%
% F@'# C ' =?< ' ' F= ' @@' A 'A?' 4 #6' ' I4>" 'AI >@E%
Q &

=E @C' G= ' =' AJ @C' A1' F@') AC< F C@'# C ' =?<%'=?E' F=E'
I@@?' ' FAC 'I@1AC@' F@' @C ?>' =' IC@G@C' F@' =>@?'A1' F@'
I=?<' = @E' F= ' =E @C'G= ' ?A ' ?' F@' F=I 'A1 EC=G ?>' A?' F@'
F=?<%'F ' F= ' 1'F@'F=E' I@@?' @C = ?' A1' F@' I=?EGC ?>' I@ ?>'F '
F@' FA E'F=B@'D= E' F@' JA?@ ';' I ' 'G= '?A 'DCAB@E' F= ' =E @C%'
= ' F@' E= @' A1' F@' ? C b @? %' AC' F@' J @' A1' F@' @C ?>%' F=E' =? '
@11@ ' ?' F@' I=?< ' 'G= 'AIZ@ @E' F= ' F@' ? C J @? 'G= ' JT
DCAD@C ' E@ C I@E' = %=?' ACE@C;' F= ' 'E E' ?A 'I?' F@' 1= @' A1' '
D CDAC ' A' I@' =?' ACE@C;' ?AC' G= ' ' F@G?' F= ' F@' D=C 'GFA @'
?=J @' G= '1AC>@E' F=E' =? ' = FAC ' A' ACE@C' D= J @? ' I ' F@'
Z C 'F=B ?>' A?B @E%' F@'Z E>@ %' A?' =4' = @'C@ @CB@E%'F@ E' F= ' '
G= ' =?' ACE@C' 1AC' F@' D= J @? ' A1' JA?@ %' =?E' F@C@1AC@' F@' A?T
B A?' G= 'C >F %' 1 3' 9

F@'D=C ' ?'
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& F@ C@' F@'1A >@E' ? C J @? 'E E' ?A 'D CDAC 'A?' F@'1= @'A1' 'A'
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C >F 'A1' DAG@C' A'ACE@C' F@'D= J @? 'A1' F@' JA?@ '= ' F@' J @' GF@?'
F@' ? C J @? ' G= ' EC=G?%' 'GF ' ?A ' =?' ACE@C' 1AC' D= J @? ' A1'
JA?@ 'G F ?' F@' ' & ' :%' ' %' ' ' F@' ?E J @? ' F=C>@E'
F@' DC A?@C' G F' 1AC> ?>' =?' ACE@C' 1AC' F@' D= J @? ' A1' JA?@ %'
GF F' G= ' @ 'A ' ?' F@'1 C ' A ? '= '1A AG '$ `

T 4 &4> < 'D> ' %' 9:-
7 * C' F@C%' ' FA E' 1@@ ' >C@= 'AI >@E' A' A ' 1' A 'G '
D @= @' A' @?E' I ' IA' I@=C@C' F@' J' A1' FC@@'DA ?E %' = ' 'F=B@'
F=E' =' =C>@' b =? 'A1' IA?@ ' F 'G@@<%'=?E' F@' J =?' 1CAJ' A@'
1ACE' ' AJ ?>' ?' A JACCAG'G F' ' G 'G@ >F ' 'F=B@'=IA '
A?@' A?' ?AG

7)'A H% !
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7 * C' ' F@C%' =?G=J @%H

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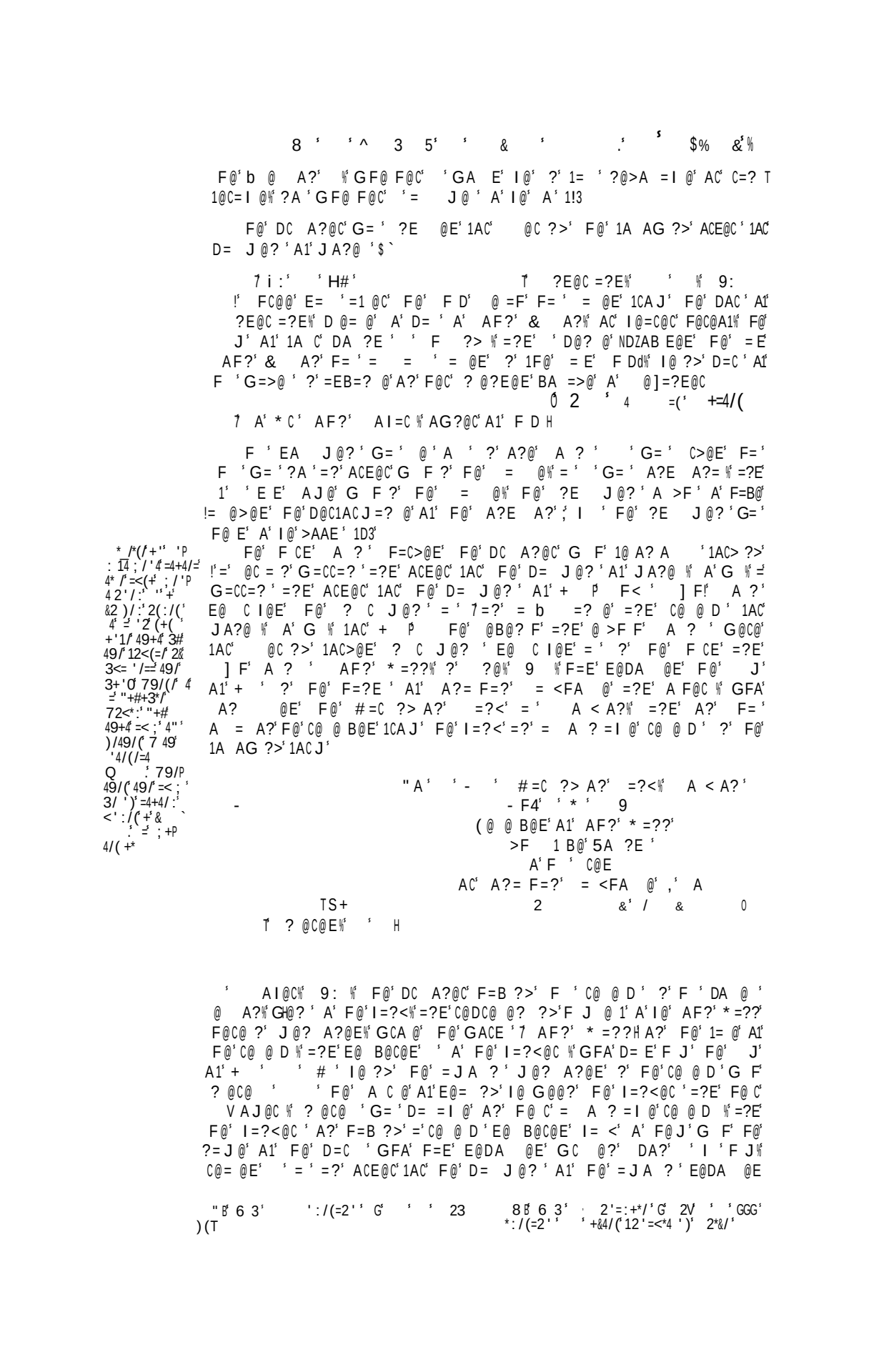

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D= E' F@' ACE@C%' F@' EA J@?' @1' E@ B@C@E' D' A' F J' GA E' F@' =' G=CC=? %' GF F' GA E' I@' =' E F=C>@' 1CA J' F@' D@C A?' A' GFA J' F@' F=E' A' = A ?'1AC' F@ DA A11 @%' JA?@ ' F@C@1AC@' F@ 'G@C@' A1' AD ? A?' F= ' F@' A ? 'A1' F@' ?E J@?'G@C@'?A' ? @C = ?%' J@=? ?>' F= ' F@ @' ? C J@? 'F E' IA F' F=C= @C %' NAd

=' 42' 4* Y
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& F' C@ D@ ' A' F@' 1AC J' A1' F@' ACE@C' ?' A @C' C@ D@ %' ' =DD@=C '?A ' A' I@' ?@ @ =C ' F= ' F@' D=C =C' >AAE ' FA E' I@' F@C@ ?' D@ 1@E%' DCAB E@E' 'I@' A? @B@E' ?' @CJ ' ? @ > I@' A' F@' D=C @ ' F@J @B@ %' A' GFA J' F' ACE@C' '=EEC@ @E

(:/(' '' 49/'
&2**27 ')'
&2(:' ' */+=/'
42' :/* JI(' 5'
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& F@C@' F@' DC A?@C''F=E' I@@?' A?1 @E' A1' 1AC> ?>' =?' ACE@C' 1AC' F@' E@ B@C ' A1' >AAE ' A' F@' 1A AG ?>' D CDAC $ 7 @D ' - CE%' . :' C% '5 @= @' A' E@ B@C' J 'GAC<' A' F@' I@=C@C ` E =' @ %' @@ ' C@@ %X A?EA?%H G F' ? @?' A' E@1C= E' F@' G=CE4@?' =?E' AJD=?' A1' >A E J F ;' =?E' '=DD@=C@E' F= ' F@' >AAE ' ?' b @ A?' G@C@' =C @ ' A1' D = @%' GF F' F=E' I@@?' @?' I ' * @ C ' @ %' =' B@CT J F%' A' A E J F H = %' A' I@' J =C<@E;' =?E' F= ' F@' 1AC J' A1' F@' ACE@C' G= ' F@' =J@' = 'G= ' = ' DA?' F' A = A? %' @] @D ' F= ' ?' C ?@ %' =?E 'I ' F@' C @' A1' F@' D = @' A11 @%' F@' @B@C=' AC 'A1' GAC<%' G F' F@' G@ >F 'A1'R F@' B@C%' A >F ' A' F=B@' I@@?%' J@? A?@E' ?' ;' F@' Z E>@ ' =11 C J@E' F@' A?B A?' DA?' C@1@C@? @' A' F@ J %' =1 @C' =' &4 !4 ' ?' =CC@ ' 4*'C>#2& ' ' F@' DC A?@C' G= 'D=CEA?@E' A?' A?E A?' A1' C=? DAC = A?%' 1E3

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1*/(0' 42' 4 /'
12;"+'#

F@' DC A?@C' G= ' ?E @E' 1AC' @C ?>' =?' ? C J@?' E@ C I@E' ?' AJ@' A ? ' = ' =' G=CC=?' 1AC' F@' E@ B@C 'A1' >AAE %' ?' A F@C ' = ' =?' ACE@C%' =?E' ?' A F@C ' = ' =' C@b @ ' F@' DC A?@C' G@?' A' F@' A?EA?' DA < ' = E' DC@ @? @E' A' =' @C<' ?' F@' @CB @' A1' F@' AJD=? ' ?' F@' C@ @?' 3 = ' G ?@' E@D=C J@? %' =' EA J@?' = @E' =' = ?>' ACE@C%' ?' F@' 1A AG ?>' 1AC J' ; `

7 -:-

7 A' F@' AAD@C%' 3 = ' A?EA?' 5A < %' 9:' ;'

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7]' C=B@ @C%' =D ' ?' ¢' =E K%' 4

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F@' A C @' A1' I ?@ ' = ' F@' A?EA?' #A < ' G F' C@1@C@? @' A' F' ACE@C ' ' F= ' F@' J @C F=? %' GFA' F= ' G ?@' ?' F@' B= %' =?E' G F@ ' A' @?=I @' =' D=C ' A' = @' %' > B@ ' =?' ACE@C' ?' F@' 1AC J' @' A ' ' ' F@?' =<@?' A' F@' @ K' I@1AC@' J@? A?@E%' =?E' F@' G @ ' F ' ?= J @' = CA ' %' =?E' GF@?' 'F= ' I@@?' A' >?@E' I ' F J%' I ' ?A ' A F@CG @%' F@' AAD@C ' A1' F@' AJD=? ' =C@' = FAC K@E' A

W2d /)' ' ! *19(=4' G' ' ' ' ' " B' 2' /=S' 1+=/' .' /+19' AH' G' +=4
GHH' ' ' ' GGI ' M' 1' .N' =' HN' "' NI.

= ' DA1 ' ⅋=?E'= AG' F@' D=C ' DC@ @? ?>' ' A' = @' F@' G ?@ ' E@ C I@E' ?' ' F@' ? C J@?' ?'b @ A?' G=' DC@ @? @E' A' F@' @C<' 1AC' F ' >?= C@⅋ I ' F@⅋ D@ ?>' ' G=' ?A ' >@? ?@⅋ C@1 @E' A' >?' ' F@' >?= C@' 73 ? @?' =?E' 5 >F⅌ G=' =' 1AC>@C ' 5A4' 'F'' DC A?@C' ' B=' AIZ@ @E' F=' =' = ?>' ACE@ 7 A E' ?A ' I@' A? E@C@E' =?' ACE@C' 1AC' F@' E@ B@C ' A1' >AAE ;' =?E' @ A?E ⅋ F=' F '?@B@C' G=' =' D@C1@ ' ACE@C⅋ ?AC' G=' @C@E' =' F⅋ I ' G=' F=?E@E' A' F@' @C<' 1AC' F ' >?= C@' ?' ACE@C' F=' ' J >F ' I@ A1F@' =?' =B= =I @' = ?>' ACE@C ' F@' DC A?@C' G=' A?B @E⅋ =?E' DA?'=' = @' C@ @CB@E⅋ =1 @CH=C> J@? ' A?' IA F' F@' =IAB@' DA ? ⅋=?E' J@! =<@?' A' A? E@C⅋ & E@⅋ ' ⅋' E@ B@C@E' F@'Z E>J@? '= b AG $ 7 F@'1 C 'b @ A?' 'GF@ F@C' F@' ? C T J@? ⅋GF F' F@' DC A?@C' @C@E⅋ G=' =?' ACE@C ' 'G=' E C@ @E' A' F@' AAD@C' =' =' D=C =C' B= ⅋ ?' F@' A?EA?' #A < ⅋=?E' D CDAC @E' A' I@' >?@E' I ' F@' AG?@C' A1' F@' G ?@' ?' F=' B= ⅋ =?E' G=' ?' F ' 1ACJ⅋ ['5@C J ' @ 1' =?E' AJD=? ' A' = @' G ?@ ']' C=B@ @C⅋ń , ⅋⅋GF F' J ' J@=?⅋D@C J ' F@' D=C ' >? ?>' =?E' AJD=? ' A' = @;' F@'>CE@ H⅋ F@C@1AC@⅋ A' F@' AAD@C' A' D@C J ' F@' G ?@ ' A' I@' = @E' G=' > B@?' I ' F=' D=C ' ' ' C @' F=' F@' ACE@C' G=' DC@ @? @E' I ' F@' DC A?@C' A' =' @C<' A1' F@' AJD=? ' ?' ACE@C' F=' I@' J >F '= A'=11]'F '?=J@' A' ⅋=?E' G FA 'F ' >T ?= C@' F@' AAD@C' F=E' ?A'= FAC ' A' AI@ ' ;' I ' 'G=' ?A ' F@' @ ' =?' ACE@C' I@ = @' F@' AAD@C' F=E' ?A '= FAC ' A' AI@ ' ' >= ?⅋= J ?>' F=' F@' >?= C@ 'A1' IA F' F@' J @C F=?' =?E' F@' @C<' A1' F@' AJD=?' G@C@' ?@ @ =C ' A' J=<@' =' D@C1@ ' =?E' @11 @?' ACE@C⅋ 'GA E' I@' =?' ACE@C' I '@= F' =' AA?' =' F ' >?=T C@' G=' =11]@E' 1' =' DCAJ AC '?A @' G=' J=E@' D= =I @' A' '=?E' '?A ' ?' D=C ?@C F D⅋ AC' F@ C' ACE@C⅋ A' F=' F@' >?= C@' A1' IA F' GA E' I@' (@b @' A' J=<@' =?' @11 @?' ?EAC @J@? ⅋=' D=C ' 1AC> ?>' F@' ?EAC @J@?' A1' ⅋=?E' @C ?>' F@' ? C J@?' A' ' 1AC' F@' D CDA @' A1' DCA C ?>' F '! >?= C@⅋ GA E' I@' > ' A1' @C ?>' =' 1AC>@E' ?EAC @J@? ⅋ N>⅌ DA?' F@' =J@' DC ? D @' G@' F ?<' F=' F@' DC A?@C' ?' F ' = @' G=' > ' A1' @C ?>' =' 1AC>@E' ACE@C' F@' ?@]'' b @ A?' ⅋GF@ F@C' ' =?' I@' A? E@C@E' =?' ACE@C' 1AC' F@' E@ B@ 'A1' >AAE ' "AG⅋ = FA >F' ' ' C @' F=' F@' b =? 'E@ B@C@E' 1AC' F@' D CDA @' A1' = ?>' 'B@C ' J= ⅋ @' ' ' JDA I@' A' = ' F=' ' '?A '=?' ACE@C' 1AC' F@' E@ B@C 'A1' 4& ' G ?@⅋ =?E' = 'G@ =??A '=DD ' F@' DC ? D @' A1' # ' &! !& ! ' 4 ' >"6 ' ?' A' F' =' C=? = A?⅋ G@' 1@@ ' IA ?E' A' = ' F=' ' G=' =?' ACE@C' 1AC' F@' E@ B@C 'A1' >AAE ⅋ =?E' F=' F@' B@CE ' A1' > ' G=' C >F ⅌ 1"3

F@' ACE@C' G '?A 'I@' F@' @ ' F@' IZ@ 'A1' 1AC>@C ⅋ A?' = A ' A1' '?A ' I@ ?>' =B= =I @' I 'C@= A?' A1' AJ@' A = @C=' AIZ@ A?⅋ ?A '=DD@=C ?>' DA?' F@' 1= @' A1' ' F ⅋GF@C@' F@' DC A?@C' F=E' I@@?' A?B @E' 1AC' 1AC> ?>' =?' ACE@C' 1AC' F@' D= J@?' A1' DC K@' JA?@ ⅋=?E' '=DD@=C@E' F=' F@' D=C 'GFA @' ?=J@' G=' 1AC>@E' G=' =' E F=C>@E' @=J=?⅋ =?E' G= ⅋=' F@' J @' F@' ACE@C' IAC@' E= @⅋ G F ?⅋ @B@?⅌ J @' A1' F@' DAC' GF@C@' F ' G=>@' G@C@' D= =I @;

(:/('24' +J+ *+3*/' 3# (/+=2 '' 2⅋ =2 ;/' 12**+P 4/(+*' 236/14 2'' ; +# #/4' 3/' 49/' =<36/14 2⅋ &2()/(#

W6b' /)' ' '4/(32442 ;' :' /'' ' ' I. " B /V ,' ** :)/' :' /'' ' ' IMI' G' ' ' ' ED.' <(')' 49/' +()< ;/'4' *:/(=2'' ' =+ :' 0 '' 2(:/(=' +'' 2(:/(3# +' "+(4# 79Z' ; +# 12 ; ;+' :' 42' +' "+(4# 79Z' ; <=4' 23/#' ' 7+((+'4' =' +' * 0/' :

(/14 2'' 42' +' "+(4# 79Z' ; +# 23/#' +' :' =' ' :/ ; ' & / :' 3# 49/' 7+((+' 4' &' 9/' :2/=' =2' ' (/T</=4' =' +'' '=4(< ;/'4' +: :(/==/:' 3# +' # 2' /' "/(=2'' 42' +' 249/(79Z' 9+=' +'' '4/(/=4' '' 49/' =<36/14 ; +44/(2⅋ 49/' (/P T</=4' +' :' ; +# 12 ; "*# 7 49' 49/' (/T</=4 &' 9/' "*/+=/=S

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EYY 8 ' ' ^ 3 5' ' & ' .' ' $ % &' o !

?E@C' GF F' C J =? @ ' F ' >@? ?@' ACE@C' GA E' ?A ' F=B@' I@@?'
B= E% I ' F@' DCAB A? ' A1' F@' -' @A ' % ' :% ' -% ? @ ' J=E@'
?' F@' J =??@C' F@C@ ?' DC@ C I@E' ;' F@' Z E>@ ' F@ E' F@' A? A?'
% A' I@' DCAD@C% F@' ACE@C' @ 1' D CDAC ?>' A?' F@' 1= @' A1' ' I@'
J =E@' = ' =?A F@C' D = @' I@ A?E' F@' 6 @E' E =? @%N'd

+=/-' +-' 42' F@' DC A?@C ' G@C@' A?B @E' A1' 1AC> ?>' =' G=CC=? ' 1AC' F@' D= T
7+((+'4-' &2(' J @? ' A1' J A?@ % G F' ? @? ' A' E@1C= E' #=B E' B=? ' =?E' A F@C
49/' "+# ; /'4' # ' B=? ' =?E' 1A C' A F@C' D@C A C ' =CC @E' A?' I ?@ ' ?' D=C ?@C F D'
2&' ; 2' /# = ' I=?<@C % ?E@C' F@' 1 C J' A1' F@' C@ ZD?' =?< ' ' #=B @ ' =?E' -'
' 7 (4 ')' "<(-% ? J I@C' A1' A F@C' D@C 1 % ? E ?>' F@' DC A?@C % G@C@' J @J I@C '
"2(4 ')' 42' A1' =' I@?@1 ' I% = @E' !' F@' A = ' C>=? ' AE>@' A1' EE' @ T
+<492(a/' 49/' AG H #=B E' #=B @ ' F@ E' =?' A11 @' ?' F@' I' = @E' 7 F@' "AI @'
9/+(/(-' 42' (/P C=?E;H #=B E' A E' F@ E' F@' A11 @' A1' 73 @' C=?E H F@'
1/ J/' ; 2' /#' 1 ?E ' A1' F@' I' F=E' I@@?' C= @E' I ' F@' A? C I A? ' A1' F@' E 1T
"'*+1/ :' '' +' 1@C@? ' J @ J I@C ' F@' I' F=E' = ' E 11@C@? ' J @ ' E@DA @E' G F'
3+' 0' 3# +' F@' C@ A?' =?<' =' J' A1' -8 % =?E' =' J' A1' A- % 1AC' GF F'
&(/' :*#' =2P J ' F@' I=?<' >=B@' AJ JA?' I=?<@C H C@ @ D % =?E' I ' E@ C@' A1'
1 /4#' 2''+1P F@' E@DA AC ' F@ ' GCA @' = CA ' F@' C@ @ D ' F@' ?= J @ ' A1']' D@CT
12<' 4+3*/' (/P A? % GFA' G@C@' C@DC@ @? @E' A' F@ J ' = ' I@ ?>' F@' AJ J @@% =?E'
1/ "4=' =' +' F@' I=?<@C ' G@C@' E C@ @E' ?A ' A' D= ' < ' &4 '' J @? A?@E' ?' F@'
7+((+'4' &2(' C@ @ D ' @] @D ' A' F@' ACE@C' A1' F@' AJ J @@' A1' F@' I ' F@'
49/' "+# ; /'4' C@ @ D ' G@C@' <@D ' G F' @C = ?' = F' I@ A?> ?>' A' F@' I! ?' =
2&' ; 2' /# IA]' G F' GA' A < % F@' <@ ' A1' A?@' A <' I@ ?>' <@D ' I ' #=B E'
#=B @ ' = ' "AI @' C=?E% =?E' F@' <@ ' A1' F@' A F@C!' A <' I ' =?T
A F@C' A11 @C' = @E' E@D ' C@= C@C ' F@' DC A P@C ' A? C B@E' A'
>@ ' DA @ A?' A1' F@' IA]' =?E' ' A? @? % =?E' F@ ' DC@ @? @E'
F@' C@ @ D ' = ' F@' C@ A?' =?<% A>@ F@C' G F' =' D=D@C' GC ?>'
= ' 1A AG

7 C>=? ' AE>@"' CG=??% :'F' * =C F% :-
7 C% ` ' G@' F=B@' F=E' =' D =?% GF F' G ' C@ C?' J AC@' ? @C@ '
A?' A C' = F% G F' >AAE' @ C % F@' I@=C@C ' =C@' = FAC @E' A'
=DD ' 1AC' F@' = J @ ' ?' G ?@ ' F@C@A1' G@' I C I@' A C' ?=J@ %
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0 " ' ' '
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7 C>=? ' AE>@% CG=??%H @? C ?>' GA' A @E' I=?E ' F@'
@ @C ' " ' ' =?E' 3 ' ' G@C@' DCAB@E' A' J @=?' "AI @' C=?E' =?E'
3 @ C=?E ' F@' DC A?@C % A?' DCAE ?>' F@' C@ @ D ' =?E' D=D@C%
E@ C@E' A' F=B@' F@' % =?E' * C ' B=? % A?@' A1' F@' D=C ?@C ' A1'
@' I=?<% A? E@C ?>' F@' D=D@C' DCAE @E' A' I@' =?' = FAC ' 1CAJ'
F@' I% D= E' F@' J A?@ ' A' F@' DC A?@C ' * C ' B=? ' = @E'
F= ' F@' FA E' ?A ' F=B@' D= E' F@' J A?@ ' A?' F@' C@ @ D ' = A?@'
G FA ' F@' D=D@C% ?AC' A?' F@' D=D@C' G FA ' F@' C@ @ D ' F@'
>?= C@ ' G@C@' = ' 1AC>@E ' ?' F@' D=C ' A1' F@' DC A?@C ' ' G=' '
A? @?E@E' F= ' F ' G= ' ?A ' =' G=CC=? ' 1AC' F@' D= J @? ' A1' JA?@ %
=?E' @B@?' 1' ' G@C@% @ ' F= ' F@' DC A?@C % I@ ?>' J @J I@C ' A1' F@'
I% A E' ?A ' I@' A?B @E' A1' 1AC> ?>' I % DA?' =' = @' C@T
@CB@E% F@%Z E>@ ' = ' FA >F ' F= ' F ' G= ' =' G=CC=? % =?E' F=

"B A.'0 '42=9S' /+=/' G' +=4 ' ' 1' .N' +'249/(' "2 '4' .' "' EA.' /' /)' &'
=' HN' "' NIG' G' /+19' EEH' J . O/' G 22' ' ' ' DM' .' "' YYA
"' ((-' 9/' =+ ; /' 1+=/' =' 1 4/ :' &2(

F@C@' G= ' ?A' >CA ?E' A1' AIZ@ A?' F= ' F@' DC A?@C ' G@C@' ZA ? ' AG?@C ' 1 3

F@' DC A?@C' G= ' A?B @E' A1' @C ?>' A?' F@' - 8 F' A1' * = ' 9 : : ' F@' 1A AG ?>' 1AC>@E' G=CC=? ' =?E' ACE@C' 1AC' F@' D= J @? ' A1' JA?@ '$` ' ' '

'# '=4(<' ; I '4 &2(" "+#P ; / '4 2& ; 2' /# <' : /(" 79 13' &) / ' < ' / ' 49/' "+#/(" ; +# (/P 12J/(49/' + ; 2<'4 +)+ '=4 49/' "+(4# =) ' ')' 4 ' =' +' 7+(P (+'4 &2(49/' "+# ; / '4 2& ; 2' /#' 79/P 49/(49/' "+(4# =) ' ')' 4 9+=' 2(9+=' 24' +4 49/' 4 ; /' &<' : =' '' 49/' 9+' : =' 2& 49/' "+(4# 42' 792 ; ' 4 =' +: : (/==/ :

7 * C' * =C ?' G ' I@' D @= @E' A' @?E' I ' F@' I@=C@C' i ' A?' * C' AE>@H' = A ? ' * C'' AE>@' ' B@C ' I=E' ?' I@E' =?E' =??A ' AJ@' F J @ 1' 4

4' G F #' 3 +' AC@ J =?

' * 6$ 3 ' P%68 : = 5

* =C ?' G=' @C<4' A' @C = ?' I=?<@C ' G F' GFA J' AE>@' <@D ' =?' = A ? ' ' G=' F@' E ' A1' (= DF' F@' 1AC@ J =?' A' D= ' AE>@H' =IA C@C ' I ' F@' F=E' ?A' >@?@C= ' = FAC ' A' EC=G' J A?@ ' @' F=E' A? @' ?' =? =C ' DC@ @E ?>' EC=G?' =' F@b @' GF F' AE>@' F=E' =EAD @E' F ' F@' F=E' > B@?' F J' ?A' = FAC ' A' ECbG' F ' F@b @' ' G=' ?A ' ?' (= DF H' F=?EGC ?>' ?AC' F=E' F@' AC' AE>@' = FAC K@E' =? ' A?@' A' EC=G' ' ' E E' ?A ' =DD@=C' DA B@ ' FAG' AE>@H' = A ? ' AAE' A?' F@' E= ' F@' F@b @' G= ' @C@E' ;' ' G= ' = ' @ @E' F= 1' @=C ' ; I ' * =C ?' D= E' F@' = J A ? ' G FA ' F@ = A?' =?E' = @E' F= ' F ' J DC@ A?' &= ' F= ' F@' = A ? ' G= ' ?' AE>@H' 1=BA C' DA?' =' = @' C@ @CB@E' DA?' F@' b @ A?' GF@ F@C' F ' ? C J @?' G= ' ?E@C' F@' C J =? @ ' = ' G=CC=? ' AC' ACE@C' 1AC' D= J @?' A1' J A?@ ' F@' A?B A?' G= ' F@ E' C >F ' =?E' A @C E>@' ' = 4 F@' ?@] ' = K@ ' E@ B@C@E' Z E> J @?' F ' $ 7 ? ' ? C J @?' 1AC' D= J @?' ' ?E@C' GF F' 1' >@? ?@' F@' D= @C' J = ' C@ AB@C' F@' = J A ?' =>= ? ' F@' D=C ' >? ?>' ' J = ' DCAD@C ' I@' A? E@C@E' = G=CC=? ' 1AC' F@' D= J @?' A1' J A?@ ' =?E' ' '@b = ' F ' GF= @B@C' I@' F@' = @' A1' F@' = A ? ' I@ G@@?' F@' D=C @ ' =?E' GF@ F@C' F@' D=C ' >? ?>' ' F= ' = ' F@' J @' 1 ?E ' ?' F@' F=?E ' A1' F@' D=C ' A' GFA J' ' ' =EEC@ @E' AC' ?A ' F ' = @' J = ' I@' = E' A' I@' C@ J AB@E' A?@' @D' 1 C F@C' F=?' F@' ACE ?=C ' A?@' GF@C@' F@' ?= J @' A1' F@' = = ' = ? =?' ' 1A H>@E' I@ = @' (= DF' F=E' F J @ 1' ?A' = A ? ' G F' * @ C ' AAE@' =?E' A' ;' I ' I ' F ' ? C J @?' ' 1' >@? ?@' (= DF' = ' ?' @11@ ' F= ' F@' F=E' = FAT C ' 1CA J' * C' AE>@' GFA' F=E' =?' = A ? ' G F' F@ J ' ;' = ' =>= ? ' F J' F@C@1AC@' ' ' = ' J F' =' G=CC=? ' = ' 1' F@' F J @ 1' F=E' F=E' F' = A ? ' =?E' GA E' F=B@' @b = ' IA ?E' F J ' F@' E 11@C@? @' ?' F@' 1= ' F@C@1AC@' ' J J = @C = ' ?' F@' DC ? D @' ' J = ' ?A ' I@' @= ' A' C@ A? @' = ' F@' E@ A? ' A?' F ' DA ? ' =?E' A?@' A1' F@' Z E>@ ' EA I @E' A?' F@' DCADC @ ' A1' F= ' GF F' ' = J ' ?AG' DCAT ?A ? ?>' =?E' DC ? D= ' A?' F@' = @' A1' - 2 ' B' F<4 & ' 1>3' ' ' G= ' FAG@B@C' b @' = 1 @E' G F' F@' A ?E?@ ' A1' F@' DC ? D @' A?' GF F' G@' DCA @@E H 1 3

F@' DC A?@C' G= ' A?B @E' A1' @C ?>' =' 1AC>@E' G=CC=? ' 1AC' F@' D= J @?' A1' J A?@ ' GF F' G= ' = ' 1A AG '$`

' 7(4 ')' '2 =) ' / :' 3<4 +1 ' 1/ 4/ :' ; +# 3/' +' 7+((+'4

7 A' * A ?@]' =?E' A ` 5= ' A' J ' ACE@C' GA' J A? F ' =1 @C' E= @' A' * C' AF?' J F' F@' J' A1' i 9 ' =?E' E@E ' F@' = J @' A ' A1' J ' = A ? H

W ' +((=' G ' ' M' ' GYD' .' ' ' ' D.N' 9/' 6<:) ; / '4 =' &(2 ; .' ' ' ' .DN 4' 7+=' 2*/(:)/' ' 792' W ' ' '' EDD :2<34/ : W /) ' · J +9' ' /'' M' ' HA

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EY 8 ^ 3 5 & .: $% &E'E

F@C@ G= ?A >?= C@ I = CA F@ 1CA? A1 F@ ? C J@? G= GC @? 7 @D @E <@ =E@H =?E' G= ?EAC @E' 7 AF?' J F 1=CJ@C' = = F=J ?A '=' AJ@C' A1' F@' I=?<@C ' <@' =E@' G= '=' AJ@C =?E' <@D ' JA?@ ' & F' F@J ';=LE ' DA?' =' = @' C@ @CB@E' A?' F@' b @ A?' GF@ F@C' F ' ? C J@? ' G= ' DCAD@C ' E@ C I@E' = ' =' G= =? '1AC F@' D= J@? 'A1' JA?@ F@' Z E>@ ' = ' FA >F ' F= ' ' G= ' =' G=CC=? '1CAJ' <@' =E@' A' F@' I=?<@C ' A' D= ' A' ' J F =?E' 1' >@? ?@ GA E' F=B@' I@@ (' =' G=CC=? ' A' F@' I=?<@C ' A' D= ' F@!JA?@ ' 753

1'=?' ? C T J@?' I@' F' F= 1' 'G@C@' >@? ?@ ' &A E' = FAT C K@' F@' D=C ' A' D= ' F@' JA?@ ' ' =' G=CC=?' 1AC' F@' D= J@?' A1' JA?@

F@' ?E J@?' F=C>@E' F@' DC A?@C' G F' @C ?>' F@' 1A AGT ?>' 1AC>@E' EA J@?' $` ' 4

7 * C' AG@ 7 A?EA?

7 A >F ' A1' ' #=G A? ?> F' =?E' AC@ >?' 1C ' J@C F=?' =?E' DA = A' = @ J=?

7 "AB ' F ` -' I F@ ' A1'=DD @ `

7 C ` ' FAD@' A ' G ' @] @' J @' @?E ?>' 1AC' F' C 1 @ F ' F=B@' C@ @ B@E' =' =G @CH ' @ @C' F ' JAC? ?> =?E' ? @ ' ' =?' J =<@' D' =' @C = ?' = J A ? ' I ' A?@' AH A <' F@C@' G ' I@' =?' = A?' AJ J@? @E' =>= ? ' J@ =?E' ' = J ' AI >@E' A ' F ? ' =1 @C' @B@C ' F ?>

7) A C , , ,

AG@ A' GFAJ' F@' EA J@?' G= ' E C@ @E G= ' ?E@I @E' A' #=G AD F@' D@C A?' I ' GFAJ' ' D CDAC @E' A' I@' >?@E ?' F@' J' A1' ' 1AC' GA' I F@ ' A1' =DD @ ' ' G= ' AIZ@ @E' F= ' F@' EA J@?' G= ' ?@ F@C' =?' ACE@C' ?AC' =' G=CC=? ' 1AC' F@' D= J@?' A1' JA?@ ';' F@' AIZ@ A?' G= ' AB@CC @E' =?E' DA?' ' = @' C@ @CB@E' F@' Z E>@ ' G@C@' ?=? D1 A ' A1' AD ? A?' F= ' ' G= ' =' G=CC=? ' 1' ' F=E' I@@?' =' >@? ?@' EA J@? ' =?E' D= J@?' F=E' I@@?' J =E@' A?' ' DCAE A?' DCAA1' A1' FA @' 1= >' GA E' F=B@' I@@?' =' >AAE' E@1@? @' A' =?' = A?' 1AC' F@' ' ! F@' Z E>@ ' @@ J@E' = A' A' F ?<' F= ' ' G= ' =?' ACE@C' 1AC' F@' D= J@?' A1' ?11A?@ ' N=;d

D ?' I@ G@@?' =?' ACE@C' =?E' =' G=CC=?

F@' DC A?@C' G= ' ?E @E' 1AC' 1AC> ?>' =?E' @C ?>' =' G=CC=?' =?E' ACE@C' 1AC' F@' D= J@?' A1' JA?@ ' GF F' G= ' = ' 1A AG ' $ `

7 * @ C ' & < ? ' =?E' A =?<@C ' * @C F C

75 @= @' A' =EB=? @' F@' I@=C@C' =J @' (F=CE ' F@' J' A1' GA' F ?EC@E' =?E' 1 1 ' DA ?E ' =?E' D = @' F@' =J@' A' J ' = A ? '

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G F P # +

7 A E' * @C F=? ' ? A H

FAJ = ' F=E' =' # E4 !' '= A ?' G F' * @ C ' & < ? H I=?<' I ' ?A ' =' EC=G ?>' = A ? ';' =?E' F@' A C @' A1' E@= ?>' G= ' ?A ' A' D= ' F@b @ ' @B@?' 1' @?E@C@E' I ' F@' E@DA AC' F J @ 1' ? @ ' F@' E@DA ' C@ @ D ' G= ' = A' DCAE @E ' & >F J =?' ' 7 ' =J' A1' AD ? A?' F= ' F@' ? C J @?' ' =' G=CC=? ' =?E' ?A ' =?' ACE@C' I@ = @' ' =DD@=C '1CAJ' F@' ?= C@' A1' F@' A? C= ' I@ G@@?' FAJ = ' =?E

15 3' , /) ' ' ; 49' :' /' ' M' ' DN' 9/' ' 4 +# =' ' '' 2' /' "+(4' +' :' L' '' DMM 49/' 249/(

WXd /) ' ' +7=2' ' G' /' ' M' ' DA

F@' F=?<@C %' F=' F@' I=?<@C ' G@C@' ?A ' IA]?E' A' AI@ ' %' = FA >F' ?' DA ? ' A1'1= ' F@ ' E E' AI@ ' H "5B

F@' DC A?@C' G=' ?E @E' 1AC' 1AC> ?>' =?E' @C ?>' F@' 1A AG ?>' G=CC=? ' 1AC' F@' D= J@? ' A1' J A?@ '

4 K'

T0!" `) A ' G ' D @= @' A' 4 AJD ' G F' J ' G F%' 1' DA I @%' ?' @?E ?>' = ' J @ @?>@C' G F' F@' I@=C@C' A1' F ' ?A @' ;' F@' ' = ?>' D= J = @C;' I ' G= ?>' 1AC' F ' AJ J A?$' F@' ' F@' A = ' E@T D@?E@? @' GFA ' F@' A? C= ' E@D@?E ' A?;' ' G=? ' A1' A ' i - ' ?' F=?>@%' i ' >A E%' i8' ?' B@C%' =?E' i8' ?' ADD@C;' =?E' ' F= ' @?E' A ' 1A C' i8' ?A @ ' =?<' A1' ?> =?E

&' G ' ;≠ W =C @C J = @C @ Z@=? H

(AI@C %' =' 1 A C E@= @C' ' = ' * =? F@ @ !%' DD @E' IC@=E%' ?E@C' A? C= %' A' F@' CAAD ' = ' F@' I=CC= < ' F@C@ ' F@' DC A?@C' DC@T @? @E' A' F J' F@' =IAB@' @ @C;' (AI@C ' F=E' A?' J =? ' A = A? ' @? ' J ' A1' JA?@ ' A' F@' b =C @C J = @C @CZ@=? ' A1' =' C@> T J@? ' = A?@E' = ' F@' I=CC= < %' I ' F=E' ?@B@C' @? ' JA?@ ' A' ' 5= @ %' F@' b =C @C J = @C @CZ@=? ' A1' =' C@> J @? %' GF F' F=E' A? ' I@@?' = A?@E' F@C@' =IA ' =' G@@< ' @' C@1 @E' A' @?E' F@' JA?@ %' I ' A? ' I@ = @' F@' D@ @E' 1CA J' F@' @C J ' A1' F@' @ @C' F=' ' G=' ?A ' =' >@? ?@' A?@' (A 1@%' %' =1 @C' ?>' ' ' B' J6" " ' 183' T ' F ?<' 1' F ' I@' =' C@b @ ' A' (AT I@C ' A' D= ' - ' A' F@' I@=C@C' A?' @' GC @CH ' = A ? %' ' ' =' G=CC=? ' 1AC' F@' D= J@? ' A1' JA?@ ' F@' @ ' %' 1' F ' G@C@' =' >@? ?@' @ @C%' q ?E' F@' JA?@ ' F=E' I@@?' D= E' A' F@' I@=C@C%' GA E' (AI@C ' F=B@' =' C >F ' A1' = A?' =>= ? ' 5= @ %' F@' GC @C' V ' F ?<' F@' GA E' (AI@C ' F=E' I@@?' ?' F@' F=I ' A1' @?E ?>' JA?@ ' A' b =C @C J = @C @CZ@=? ' A1' C@> J @? ' ?' F@ @' I=CC= < ;' F ' C@> T J@? ' F=E' F@C1' C@ @? ' AJ @;' =?E' (AI@C ' F=E' ?@B@C' =EB=? @E' JA?@ ' A' F ' b =C @C J = @C @ Z@=? ;' I ' 1' F@' J @=? ?>' A1' F ' EA J@? ' I@' F=' (AI@C ' G=' A' @?E' F=' JA?@ ' I ' F@' I@=C@C' A?' 5= @ H' C@E ' =?E' = A ? %' ' %' ' F ?<%' =' G=CC=? ' G F ?' F@' J@=? ?>' A1' F@' = @ H ' F@' ?@] ' E= ' (A 1@%' %'' = E%' F=' A?' AA< ?>' =>= ?4=' F@' EA J@? ' F@' FA >F ' F=' ' E E' ?A ' = FAC K@' F@' D= J@? ' A1' F@' JA?@ ' 4' < ' < 6" " ' I ' A? ' E@ C@E' F=' =' J@ @?>@C' A1' (AI@C H J >F ' I@' @? ' G F' ' F@' DC ? D @' G=' =' F@' F=E' = @E' %' I ' F@' EA J@? ' E E' ?A ' AJ@' G F ?' ' N=d

F@' DC A?@C' G=' ?E @E' 1AC' @C ?>' =' 1AC>@E' G=CC=? ' =?E' ACE@C' 1AC' F@' D= J@? ' A1' JA?@ %' GF F' G=' @ ' A ' ?' @= F' A ? ' F $ `

7 > ' F%' 9:9' @? @J@?% ` ' EA' F@C@I ' = FAC K@' F@' I@=C@C' A1' F ' ?A @' A' EC=G' F@' JA?@ ' F=' A ' ?AG' FA E' I@ A?>T ?>' A' J@' & =J' A<@C H

E@C A?%' %' 7 F@' ?E J@?' ' I=E%' I@ = @' F@' ? C J@?' @' A ' '=' G=CC=? ' =?E' ?A ' =?' ACE@C' B@C ' ACE@C' ' =' G=CC=? ' =?E' ?A ' =?' ACE@C H 1:3

?' =?' ?E J@? ' 1AC' 1AC> ?>' =' G=CC=? ' 1AC' F@' D= J@? ' S1' &F@C@' =' AE>@

"5B /)' , ' + ;=' G ' % ' A.' W]b /)' , ' L/()<=2' ' .' 2V' ' 'G.. //' 49 =' 1+=/' +*=2' .' "' DM ' ' WAb /)' , ' V2' ' H' 2V' ' M' GEN' WGb J .' "' EAE //' 49 =' +' :' 249/(' 1+=/=' 6 ' D' DME

9/' 4/=4' 79/49/(' +' :21' ; /' 4' =' +' 7+((+' 4' =' 79/49/(' +=P =< ; ')' 4' 42' 3/')/' < ' /' +' :' 49/' ; 2' /# 42' 9+J/' 3// '' "+ :' 42' 49/' 3/+(/(' 49/' "+#/(' 12<* :' (/12J/(' 49/' ; 2' /# &(2 ;' 49/' 7 (4/(' 2&' 4

<492(4# 42' :(+7' ; 2' /#

J @? A?@E' ?' 'G@C@' C @%' GA E' @' I@' A1'?A' 1AC @' V% F@' = @%
!FAG@B@C%' G=' @1 ' A' F@'Z C %' =?E' F@' DC A?@C ' A?B @E%' 1 3
' GF@C@' F@' DC A?@C' G=' ?E @E' 1AC' 1AC> ?>' =?E' @C ?>' 6'
G=CC=?' 1AC' F@' D= J@?' A1' JA?@ %' =?E' F@' G=' =' J@JI@C' =?E'
F@' D= E' = <C=C ' A1' =' A @ ' A1' EE' @ AG %' I ' F@' C @ ' A1'
GF F' =' <' J@JI@C' G=' @? @E' A' =?' = AG=? @' A ' A1' F@'
1 ?E ' A1' F@' A @ %' =?E' F@' A C @' A?' F' =?' A = A?' G=' 1AC'
F@' <' J@JI@C' A' =DD ' A' F@' = =C %' GFA' EC@G' A ' =?' ACE@C'
AC' F@b @' A?' 1 @' C@= C@C' k1' F@' A @ '1AC' F@' = JA ?' A' GF F'
F@' <' D@C A?' G=' @? @E' $ DA?' F ' AC @C' I@ ?>' >?@E' F@'
?AI @' >C=?E' A1' F@' A @ %' ' I@ =J@' F@' E 'A1' F@' C@= C@C'
A' D= ' F@' =JA F' J@? A?@E' ?' ' ?' F@'A = A?' ?'b @ A?' F@'
DC A?@C' AA<' =?' ACE@C' A' F= @C @ %' F@' ?AI @' >C=?E%' 1AC' F ' >T
?= C@%' =?E' = <@E' F J' A' >?' %' GF F' F@' E E' $ F@' J' J@?T
A?@E' ?' ' =' F= ' J@' G=' G@ B@' F ?> ' =?E']D@? @' A?
?' F@' =J@' E=' F@' DC A?@C' DC@ @? @E' F@' ACE@C' A' (@@ %' F@'
C@= C@C%' =?E' ' F@?' G=' =' 1A AG

4' 7 F' * =C F%' 9: ' "@GDAC
7 * C' & ' (@@ !` 5 @= @' A' D= '5' ' ' ' CI@CB @' FC@@ '
z' - '6#' 1AC' <' D= 'D= E' A' CA F@C' == ' A?@
G8 %' 1 & ;# " '
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7 i z' - '6#' "@GDAC %' F' * =C F%' 9: H

F@' GACE' =? E' 1 > C@ ' I@ G@@?' IC= <@ 'G@C@' =EE@E' =1 @C' F@'
F@b @' G=' >?@E' I ' F= @C @ ' @@ ' D= E' F@' DC A?@C'
' - '6#' 'G=' A? @?E@E' F=' F 'G=' ?@ F@C' =?' ACE@C' ?AC'
G=CC=?' 1AC' F@' D= J@?' A1' JA?@ %' I 'J@C@ '=' C@b @ ' C @%' %
7 =?<@C H F@b @' =C@' A1 @?' ?' F@' =J@' 1AC J%' =?E' J =<@' @' A1'
F@' GACE %' [5 @= @' A' D= %n' I ' F@ ' =C@' ?A ' @ ' ACE@C ' 1AC' F@'
D= J@?' A1' JA?@ ' F@' =J@' ? C J@?' J= ' I@' A1' = ' FC@@'
E@ C D @? ' X F@' A?@' ?' b @ A?' '=' G=CC=? %' =?E' =?' ACE@C%' =?E'
=' C@b @ ' DA?' F@' 1= @' '1' %' ' '=?' ACE@C%' =?E' I ' F@' @B E@? @'
' '=' G=CC=? H 1 3
DA?' =?' ?E J@?' 1AC' 1AC> ?>' F@' 1A AG ?>' G=CC=?' 1AC' D= T
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7 * = ' % 98
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N C>@A?H' ?=J@d%

' =DD@=C@E' F=' =' AJD=? ' = AG@E' F@ C' <' GAC<J@?']'
F ?>' =' G@@<' DA?' F' EA J@? ' =' F@' DC@ @E ?>' I@ D>'
AI = ?@E' 1CAJ' F@ C' C>@A?' =?E' DC@ @? @E' A' F@ C' = F @C ' F@'
E= @' =?E' ?=J@ ' A1' F@' GAC<J=?' =?E' C>@A?' G@C@' GC @?%' F@'
C@ ' G=' DC ? @E%' ' G=' F@ E' F=' F ' G=' =' G=CC=? ' 1AC' F@'
D= J@?' A1' F A?@ ;' 1AC%' 1' ' F=E' I@@?' >@? ?@%' ' GA E' F=B@'
= FAC K@E' F@' D= J@?' A1' F@' JA?@ ' I ' F@' = F @C%' =?E' @? @E'
F J' A' I@' C@D= E' I ' F@' AJD=? ' N*3
F@' DC A?@C' G=' ?E @E' 1AC' @C ?>' =' G=CC=?' 1AC' F@' D= ' '+112<'4 2&

W&% /)' ,' 2<=/' I' 2V' ' 'D' * /' W/t /)' ,' <(3/ J **/' I' 2V' ' '
"(=2'/(= 7/(/' +&4/(7+(:= 12'J 14/:' 2& .H
234+ ' ')' ; 2' /# I' &+*=/' "(/4/'1/=' +' :' &wb' /)' ,' 23' ; 49' 4+&&2(:' <; '
=/'4/'1/:' &2(' 49+4' 2&&/'1/' ? 249/(7 =/' 49/' ==' .EAM' ! (/+J/=' ' ' 'Y
"2 '4' 72<*:' 9+J/' 3// '' (/=/(J/:

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8 ^ 3 5 & .' $% &

7+) /= :</ 42 72(0 ; / '' =) / :3# + &2(/ ; + '' += 12((/14

J @? A1 J A?@ $ F@ G= ?' F@ @ J D A A1 = =??@C =?E D= E I F@ ZA I =?E G= @ J D A @E = A A =CC=?>@' F@ = A ? A1 F J @ 1 =?E F@ A F@C J @? @' J =E@ A F@ = A ? G@@< =?E ICA >F A F@ 1AC@ J =? = ?>' F@ = J A ? A' GF F' F@ G= @? @E F@ 1AC@ J =?' AA<@E' AB@C =?E' 1' @' =G' G= k @CC@ ' >?@E' F@ DC A?@C' AA<' F@ = A ? A' >?@E' A' F@ = F @C GFA A?' @@ ?>' F@' >?= C@ D= E' F@ = J A ? F@ DC A?@C' A?' A?@ A = A?' = @C@E' F@ = A ? 1AC' =' =C>@C' J' F=?' G= E @' A' F J G F' F@ 1AC@ J =?H ?= J @ 1AC>@E' DA?' q' C=JG@ F@ E' F=' F@ EA J @? G= ?A ' G=CC=? 1AC' F@ D= J @? A1 JA?@ 123

/(4 & 1+4/ 2)22:' 12 ' :<14 2 +' 12 ' J 14

F@ DC A?@C F=E I @@?' =' A?B ?' F@ @G@ A?B @ =& F J @? =?E' I =' C @' A1' F= @ = I F J @? @B@C 7 A?B G= C@T E @E' G F' =' @C = ?' J' = @E' 7 A?B J A?@ ;H =?E' F@' DC A?@C G= @? @E' ?E@C' F C @' A' F@' J' A1' - 0# ; GF F' GA E' F=B@' I @@?' D= E' A' F J' A?' F@' DCAE A?' A1' =' @C 1 = @ >?@E' I GA' G ?@ @ =?E' F@' @C> J =?' A1' F@' D=C F = F@' G= >@ ?>' F B ?>' FA?@ F@' DC A?@C' @? ' I DA ' A' F@' D@C ? @?E@? A1' F@' @ = I F J @? F@' 1A AG ?>' EA T J @? $ `

7 F@C@I @C 1 F= F@' G F ? ?= J @E' & = J' * F@ N F@ DC A?@Cd' >= ? ?>' F B ?>' I F=G< ?>' M6 #' <' @D 98

/ ! (21/(' 22 ')+4/' /4/(32(2<)9
7 & ' 7 & # 3 =C 3 I@ F' 5@ @CH H

F@' >?= C@ ' G@C@' 1AC>@C @ ' & = J F@ E' F= ' F ' EA J @? ' G= ?A ' =' G=CC=? ' AC' ACE@C' 1AC' D= J @? ' A1' J A?@ 1 3

(3

J6 4 - E 6 #' 0 6 > 6 4 - > *4"' M ! "' 4* Y44#

]h6</=4= &2(49/ : /* J/(# 2)22:=

?' A? b @? @' A1' @C = ?' 1AC>@E' ? C J @? F=B ?>' I @@?' F@ E' ?A A' AJ @' G F ?' F@' GACE 7 G=CC=? H AC' 7ACE@C' H ?' F@' .' @A -' --?AG' C@D@= @E N d' F@' GACE' 7C@b @ H G= ? CAE @E' ? A' F@' & :' =?E' F@' 1A AG ?>' = @ F=B@' I @@?' ? @' E@ E@E' C@ = B@' A' C@b @ 1AC' F@' E@ B@C A1' >AAE

(/T</=4 &26(49/ : /* J/(# 2)22:= ' // : ; 24 3/ + : P : (/==/ :' 42' =? " "+(4 1<'+("/(=2'

?' ?E J @? ' 1AC' 1AC> ?>' =?E' @ E?>' =' C@b @ 1AC' F@' E@T B@C A1' >AAE ?' @ A Fu' C@b @ ?' @= F' A ? ?' F@' GACE =?E' 1 > C@ 1A AG ?>' !`

0 ! / '4*/ ; / 'X

7 @' A' >AAE' = A' @ F@' I @=C@C' F=B@' 8 ' =CE A1' I @' A' D= @C? =?E' A' @?E' F@' EC=I' ? A F' D?' ?' F@' GFA @' D @ @?' A?' * A?E= J AC? ?>?' I ' AH A <' ; = A' =' =CE' J @= C@?' = ' EA' ?A '<?AG' GF= b =? G I@' G=? @E' ; =?E' A' G AI >@
7 & / # P * AC J @C C@@
7 ' @ ' F@' EC=I' I@' >AAE?' = ' ' 1AC' F@' ? D@ A?' A1' = >@? @ J =?!

=?E?' DA?' =' = @' C@ @CB@E' DA?' F@j' b @ A?' GF@ F@C?' = ' F@' !C@

W DO /) ' , ' " ** ') ' :' L ' ' ' b /' 49 =' 1+ =/' :' " ' (G 1<3' /) ' , ' ` 419/**' G' L ' ' L ' !! " B' /' 49/' 1+=/=' :' " ' EA.

b @ ' G=' ?A' =EEC@ @E' A' =? ' ?E B E =' D@C A?' I ' ?=J @' C'
E@ C D A?% F@' C@b @ ' @ ' A ' ?' F@' ?E J @?' G=' =' C@b @ '
1AC' F@' E@ B@C ' A1'>AAE ' G F ?' F@' GACE ' =?E' C @' ? @? ' A1' F@'
= @% F@'Z Q@ ' DC@ @?' F@ E' F@' A?B A?' C >F % 7C3
A' GF@C@R L@' DC A?@C' G=4' ?E @E' 1AC' 1AC> ?>' =' C@b @ ' 1AC' F@' , $ ' ' '
E@ B@C ' A1'>AAE ' G F' ? @? ' A' E@1C= E' * @ C ' & =C?@C' =?E' A % ' # ' '
=?E' F@' ? C J @?' 1AC>@E' G= ' = ' 1A AG ; ` ' : '
%$ '
Y ! > ' % ' ' ?@' ' ?' F@ J @ ' AAD' ;' A?@' 1A C' b =C ' AB=' $ 4' E
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=?E' ' G=' DCAB@E' F=' F@' DC A?@C' F=E' I@@?' ?' F@' @J D A ' A1' ;4' # ' % $'
' # '
= G=CE% =?' CA? J I?>@C% GFA' F=E' F=E' E@= ?> ' 1AC' AJ @' @=C '
G F' * @ C ' & =C?@C% =?E' F=' A? @' AC' G @% E C ?>' F@' J @' F@'
DC A?@C' G=' ?' = G=CEH' @J D A % F@' F=E' =<@?' ACE@C ' 1CA J ' F J '
A' * @ C ' & =C?@C' ' G=' = A' DCAB@E' I ' =' D@C A?% GFA!J =?=>@E'
F@' I ?@ ' A1' * @ C ' & =C?@C% F=' ' G=' F@' AJ ' A1' F@ C'
I ?@ ' A' E@ B@C'>Ab1 ' A?' F' D=D@C ' =' F@' A?@' ?' b @ A?;' '
G=' A? =? ' EA?@' @B@C ' E= ;' =?E' I@ ?>' = <@E' I ' F@' A C '
GF@ F@C' F@' F=E' EA?@' A' = ' I@ G@@?' F@' 1 ??' =?E' = G=CE% F@'
G ?@ ' C@D @E% 7 @C = ? ;' ' ' F@' ACE ?=C ' 1AC J ' A1' =' C@b @ ' A'
E@ B@C' >AAE ' A' * C' = G=CE% AC' A' =? ' IAE H DA?' =' = @'
C@ @CB@E' DA?' F@' b @ A?' GF@ F@C' F' =' D=D@C' = J A ? @E' ?' =G'
A' =' C@b @ ' 1AC' F@' E@ B@C ' A1' >AAE ' G F ?' F@' J @=? ?>' A1' F@'
= @% F@'Z E>@ ' G@C@' A1' AD ? A?' F= ' ' E E% = FA >F' ' G= ' ?A '
=EEC@ @E' A' =? ' A?@' NWCd
A' GF@C@' A?' =?' ?E J @? ' 1AC' 1AC> ?>' =?E' @C ?>' =' C@b @ ' =J@ DA ? %
1AC' F@' E@ B@C ' A1' >AAE ' G F' ? @? ' A' E@1C= E' C=E @ % ' =DT
D@=C@E' F= ' 1C=E @ ' G= ' =' I A @C' =?E' A?@ ' =' >CA @C% =?E'
F= ' F@' A C @' A1' E@= ?>' I@ G@@?' F@ J ' G= ' 1AC' C=E @ ' A' GC @'
=' ' A1' ?=J @ % G F' =?' = J A ? ' =>= ? ' @= F' ?=J @% GF F' E@?A @E'
F= ' A?@ ' G= ' A' DD ' F= ' D@C A?' G F' >AAE ' A?' C=E @ H'
= A ?' A' F@' = J A ?' @ C' ADDA @' F ' ?= J @;' =?E' F= ' F@' DC T
A?@C' AA<' =' D=D@C' A' A?@ ' ?' F@' 1A AG ?>' 1AC J ; `

7 9: % ' --	S #
K' C=E @	-
& ' A?@	
' 5C @'	8
?A ' = @	8
5@ @C' =D @ A?'	9
J @A?' & = @C '	8

@C@' 1A AG@E' @?' J AC@' ?=J @ ' =?E' =' J ' =>= ? ' @= F% =?E' F@'
J ' G@C@' = ' D% (' : ' E % GF F' G= ' F@' ACC@ ' = ?>' 1'
F@' J ' ADDA @' F@' DC A?@CH ' ?=J @' F=E'] @J= ?@E' 8 ' = ' ' AC T
> ?= ' AAE% I ' F@' F=E' D ' F@' 1 > C@' ' I@1AC@' F@' 8' =?E' J =E@'
' 8 ' DDA @' F@' J '%. ' : ' E' G= ' F@' DCA @ ACH ' >?=T
C@% 7 AF?' !=E @ H E AG% @ Z % F=B ?>' A? @E' 5= @ '
A?% % = @E' F= ' F= ' @=C?@E'Z E>@' G= ' A1' AD ? A?' F= % = FA >F'
F ' G= ' ?A ' =' C@b @ ' 1AC' F@' E@ B@ ' A1' >AAE ' A?' F@' 1= @' A1' %
@ ' ' J >F ' I@' F@G?' I ' @B E@? @' F= ' F@' A C @' A1' E@= ?>'
I@ G@@?' F@' D=C @ ' G= ' F= ' >AAE ' FA E' I@' E@ B@C@E' A?' F@

' /V ' +(' /#' [' ' ' ' ' ' +' :' +<' 42' ' ' 7/(/ +3=/ '4'
EA. ' ' ' :+*' ' ' 2(:' #' :9' (=4 z B /)' ' <*3(220' N ' ' ' HD

EDI

DCAE A?A1 F EA J@? = F ;=?E F= I@ ?> FAG? F@ D=D@C G= =C@b @ 1AC F@ E@ B@C A1 >AAE =?E = F J >F I@ F@ IZ@ A1=?A ?E J@? 1 =A 1AC>@E= @C= A? G@C@ J=E@ ?A 1 3

GF@C@ F@ DC A?@C G= ?E @E 1AC 1AC> ?>L=?E @C ?> F@ 1A AG ?> ? C J@? GF F G= E@ C I@E ? AJ@ A ? = = G=CC=? 1AC F@ D= J@? A1 JA?@ =?E ? A F@C + =C@b @ 1AC F@ E@ B@C A1 >AAE F@ DCA @ AC G@C@ C= G= A?T C= AC =?E F@ C J=?=>@C I F@ C E C@ A? @E ?A @ AC <@ A F@ C GAC<J@ GF F A? I@ ?> DC@ @? @E = = FAD <@D I * >F@ @? @E F@ FA E@C NI =?=>C@@J@? I@ G@@? F@ DCA @ AC =?E >F@ d A C@ @B@ >AAE A F@ =JA ? J@? A?@E ? F@ <@ F@ @ <@ G@C@ > B@? A F@ G'AC< J@?A ? @ A1 G=>@ ? J A?@ F@ G'@C@ ? F@ 1A AG ?> 1AC J $ `

F@ DC A?@C F=E DCA C@E = =C>@ ? J I@C A1 F@ @ <@ A I@ DC ? @E I F@ G= =DDC@F@?E@E I@1AC@ F@ A E @C =? A1 F@J G= AIZ@ @E F= F <@ G= ?@ F@C = G=CC=? 1AC F@ D= J@? A1 JA?@ ?AC = C@b @ 1AC F@ E@ B@C A1 >AAE F@C@ J I@ AJ@ F ?> A? F@ 1= @ A1 F@ EA J@? A F@G F= = =C@b @ ; 1 F <@ F=E I@@? >?@E =?E =EEC@ @E F@C@ G= ?A F ?> A? F@ 1= @ A1 A F@G FAG GJ ? @?E@E A AD@C= @ ; =?E 5 = F@ E @=C F= G= ?A =G=CC=? 1AC F@ D= J@? A1 JA?@ ; =?E = A I1 ?> =C@b @ = E 1 J A1 AD ? A? F= F@ EA J@? FA E F@G A? F@ 1= @ A1 F= = =C@b @ =?E F= A =??A I D=CA J =<@ = F ?> =C@b @ 1 EA@ ?A A? F@ 1= @ A1 I@=C F= A? C A? H =B ?> A? @E 5= @ A? 5 = =EE@E ! F=B@ E @E F = @ G F J ICA F@C =C=?1AC F@ D= J@? A1 JA?@ ?AC =C@b @ 1AC F@ E@ B@C A1 >AAE H 5 6

F@ DC A?@C G= ?E @E 1AC 1AC> ?> F@ 1A AG ?> ACE@C 1AC F@ E@ B@C A1 >AAE $ `

&F= = 11 @? >?= C@

75 @= @ > B@ F@ I@=C@C GA I=C A1 A E@C 1AC * C F=DJ=? =J IH A?E 5 = @ ; H

=?E G= F@ E F= F G= ?A =? ACE@C 1AC F@ E@ B@C A1 >AAE 1AC E E ?A D CDAC A I@=C F@ >?= C@ A1=? A?@ NQd F@ =J@ DC A?@C G= = A ?E @E 1AC 1AC> ?> F@ 1A AG ?> ACE@C 1AC E@ B@C A1 >AAE ; `

!5 @= @ A > B@ I@=C@C GA I=C A1 A E@C =?E GA IC F@ 0 (# =J IH 2 : < 4 5 = @ H

" B /) , +*4/(= I 2V GAE R B /) , 6 <==/# : 2V HIA 1&3 /) , ** = I 2V GAE 9/ /12(:/(

EDY H*' < 'W4"2 "'' 4*'N"! 6 'N6E " ' ' $% &

A' @ ' & ' FAJ = ' F=B@' F' F ?> ' NJ@=? ?>' F@C@I ' @C = ?'
>AAE ' GF F' F@' = E' & %' FAJ = ' F@?' =?E' F@C@' G=? @Ed' = ' F@'
G=? '1AC' F@'D CDA @
7 C%' ' F=B@' >A ' F@' = JA ?' A1' @B@?' =?E' G@? 'DA ?E ' 1AC'
* =C =' A@' ?' J '<@@D ?>' F ' J =? ' F=C ' '
!' ' = J ' A C' @CB=? %

G F' ? @? %', ' ' @ A?E' A ?' F=C>@E' F@' @C ?>' =' @C = ?'
1AC>@E' C@b @ '1CA J 'A?@' ??' #=B @ %' 1AC' F@' E@ B@C ' A1' @C = ?'
>AAE ' A' F J ' F@' = E' & ' FAJ = %' G F' ? @? %', ' F@' DC A?@C'
F=E' AJ@' ? A' F@' FAD' A1' F@' DCA @ AC' =C@%' =LE' = <@E' F J ' 1'
F@' <?@G' * =C =' A@' A1' 5C@?E@C>= ' @ ?>' =? G@C@E' ?' F@'
=11 CJ = B@%' F@' = E' F@' G= ' E@=E%' F= ' F@' G= ' F@C' A? ? =G%' F= '
F@'F=E' @1 ' AC' _% =?E' F= ' F@' G=? @E' I = < ' =C@' = <@E'
F J ' 1'F@' J @=? ' A' D= '1AC' ;' F@' = E' F@' F=E' ?A ' F@' JA?@ %' I '
' G= ' B@C ' =1@ ' =C@' FAG@B@C' C@1 @E%' AI @CB ?>' F= ' F@' G= '
=' C=?>@C' A' F J ';' DA?' GF F' F@' DC A?@C' = E%' 7 H ' B@C ' =1@'
H ' ?' F@' F=?E ' A1' * C ' # =B @ ' A1' 5C@?E@C' = H =C@' <?AG ?>'
F@C%' =?E' <?AG ?>' F@C' A' I@' =' C@ D@ =I @' D@C A?%' = E%' 7 1' A 'G '
>@ ' J @' F@C' ACE@C' 1AC' F@' >AAE ' A ' F= ' F=B@' F@J H DA?' F '
F@' DC A?@C' G@? ' =G= %' =?E' ?' F= 1' =?' FA C' C@ C?@E' G F' F@'
?A @' @ ' A ' ?' F@' 1 C ' A ? ;' DA?' F@' DCAE A?' A1' 5<! <' < '
G= ' 1 C? F@E' G F' F' J A C? ?>' F ?> ' = ' F@' C@b C@E%' GF F'
G@C@' D 'EAG?' A' F ' C@E ' F@' ?A @' G= ' =' 1AC>@C %' =?E' * C '
#=B @ 'F=E' ?A' J A?@ 'A1' * =C =' A @H ' ?' F@C'<@@D ?> ' A @C E>@%' %'
F=E' EA I ' GF@ F@C' F@' D=D@C' GC ?>' G= ' DCAD@C ' =' C@b @ '1AC'
F@' E@ B@C ' A1' >AAE ' G F ?' F@' J @=? ?>' A1' F@' = @%' =?E'
GF@ F@C' F@' F=C>@' A >F ' ?A ' A' F=B@' I@@?' 1AC' AI = ? ?>' >AAE '
?E@C' 1= @' DC@ @? @ ;' I@ = @' ??' #=B @ %' F=E' FA %' ?AC' G= '
DDA @E' A' F=B@%' =? ' = FAC ' AB@C%' AC' ? @C@ ' ?%' F@' >AAE '
AI = ?@E%' I@ = @' F@' ?A @' E E' ?A ' D CDAC ' ?' =? ' G= ' A' F=C>@%'
?AC' E E' ' F=C>@%' F@C' C@E %' =?E' I@ = @'' F@' >AAE ' G@C@' DD @E'
A?' F@' DC A?@CH ' AG?' C@E %' =?E' F@' =I @' 1AC' F@J ' F@' DC T
A?@CH ' A ? @' = A' >>@ @E' F= ' ?A' >AAE ' G@C@' D@ 1@E ' %'
DA?' =' = @' C@ @CB@E%' F@' Z E>@ ' DC@ @? ' G@C@' ?=? JA ' A1'
AD ? A?' F= ' F@' ? C J @? ' G= ' ACC@ ' @ ' A ' = ' =' C@b @ %' =?E'
F@' A?B A?' G= ' =11 CJ@E%' 1 3

: ' %$ ' ?! ? C J @? ' J = ' I@' =' C@b @ ' 1AC' F@' E@ B@C ' A1' >AAE '
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<% ' E G F ?' F@' = @%' = FA >F' ' ' = A' =?' ?E@C =< ?>' A' D= ' 1AC'
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' ' % E >C ?>' 7=' @C = ?' 1AC>@E' C@b @ '1AC' F@' E@ B@C ' A1'>AAE %H GF F'
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7 * C' C?@C% ` 5 @= @' A' @ ' F@' =E' F=B@' =' F= %' = IA ' ' =?E' '
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=?E' 'G= ' A? @?E@E' F= ' F ' &= ' ?A ' =' C@b @ '1AC' F@' E@ B@C '
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G@C@' F@' IZ@ 'A1' 1AC>@C ' = ' = %' ' FA E' F=B@' I@@?' F=C>@E' A'
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1 3' I 8',' &# $ ' ' / ' ' '3 ' ' I >' "# # ' # ' % ' ' #'
' 5 ',' S' ' ' :# ' 'Gi' ' % ' ;' ' ' ' # ' ; '
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H*' < 'W4"2 "'' 4*'N"! 6 'N6E " '# ' $% &'*#

G F' ? @? ' A' E@1C= E' ' =? A?'=?E' A F@C ⅋' F@' DC A?@C' G@ ' <?AG ?>' F@' = E' C@b @ ' A' I@' 1AC>@E ' F@' DC A?@C⅋' GFA' F=E' I@@?' ?' F@' @CB @' A1' * C ' # =B @ ' = ' DAC @C⅋' G@? ' A?' F@' F' A1' "AB@ J I@C⅋' 9 ⅋' A' F@' FA @' A1' * @ C ' =? A?' ,' A⅋ =?E' DCAE @E' A' J F⅋' F@ C' @CB=? ⅋' F@' 1AC>@E' ? C J @A ' ?' b @ T A?' J F⅋' ?' A? @b @? @' A1' F@' DC A?@C' DCAE ?>' F@' D=D@C⅋ E@ B@C@E' F@' A ? @CD=?@ ' A' F J ' # =B @ ' G= ' =' AJ @C' A1' =? A?' ,' A⅋ =?E' B@E' = ' 99⅋ E>= @ ' J F' E E' ?A ' F@?' <?AG' G@ ;' F@' >=B@' C@E ' A' F@' >?= C@' A1' # =B @ ;' G@ ' G= ' ?' F@' @J D A ' A1' # =B @ ⅋' =?E' F=E' = FAC ' 1CA J ' F J⅋' ?' F ' =I @? @⅋' A' G C @' =?' ACE@C' 1AC' >AAE ' ?' F ' ?= J @' ?' F ' 1AC J ;' F ' G@ ' F=E' ?A' = FAC ' A' @J D A ' =? ' A F@C' D@C A?' A' G C @' F@' =J @ ' F@' D=D@C' DCAE @E' G= ' ?A ' F@' G C ?>' A1' # =B @ ' AC' G@ ⅋' ?AC' >?@E' I ' F@' = FAC ' A1' # =B @ ' * C ' # =B @ ' = E' F@ ' >@?@C= ' G CA @' F@ C' ACE@C ' 1' @?E' D@C' I@=C@C⅋H AC' 1'D@C' I@=C@C⅋H =?E' F= ' F' ACE@C ' = ' F@ @' =C@' AJ J A?' ?' F@ C' I T ?@ ' ' G= ' AIZ@ @E⅋' F= ' F@' D=D@C' DCAE @E' E E' ?A ' D CDAC ' A' I@' =' C@b @ ⅋' G F ?' F@' J @=? ?>' A1' F@' = @' $?A' D=C =C' D@C A?' G= ' C@b @ @E⅋' ?AC' G= ' ' E C@ @E' A' =? ' D=C =C' D@CT A?' F@' Z C ' 1A ?E' F@' DC A?@C' > ⅋' =?E' = E' F= ' F@ ' A? E@C@E' F@' D=D@C' = ' =' C@b @ ' 1AC' F@' E@ B@C ' A1' F@' >AAE ' J @? A?@E' ?' ⅋' =?E' F= ' F' D=D@C ' G@C@' ?' C=E@' A' A? E@C@E ' ' DA?'=' = @' C@ @CB@E' DA?' F@' b @ A? ⅋' GF@ F@C' F@' ? C T J @? ' G= ' DA?' F@' 1= @' A1' ' A?@' A1' FA @' ? C J @? ⅋' ?=J @ ⅋' =' C@b @ ' 1AC' F@' E@ B@C ' A1' >AAE ⅋' F@' <?AGE?> ' @C ?>' A1' GF F' ' DCAF I @E' I ' F@' ' & ' :⅋' ' ⅋' ' ⅋' =?E' D=C =C ' GF@ F@C' F@' G=? ' A1' =? ' =EEC@ ' G= ' =' B= E' AIZ@ A?⅋' F@' Z E>@ ' DC@ @? ' G@C@' ?=?=? J A ' A1' AD ? A?' F= ' F@' GACE ' !'D@C' I@=C@C' H E E' ?A ' ?@ @ =C ' J DAC ' 1' @?E' D@C' I@=C@C' ;H F@ ' >F ' J @=?' 1' ' F=B@' @? ' D@C' I@=C@C$P =?E' F= ' F@C@' A >F ' A' F=B@' I@@?' =?' ?? @?EA' A' @]D = ?' F@J ' F@ ' @@J @E' A' F ?<' F@' =EEC@ ' ?A' ?@ @ =C ⅋1 3

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& F@C@' >AAE ' G@C@' AI = ?@E' I ' =' 1AC>@E' C@b @ ' G F ?' F@' ' & ' :⅋' ' ⅋' F@' ?E J @?' J ' F=B@' I@@?' 1AC' 1bC>@C ⅋' =?E' A E' ?A ' I@' 1AC' AI = ? ?>' F@ J ' I ' 1= @' DC@ @? @ ' F@' DC A?@C' G=' ?E @E' 1AC' AI = ? ?>' >AAE ' I ' J @=? ' A1' F@' 1A AG ?>' 1= @' =?E' A ? @C1@ ' @ @C$`

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11 @?; F@ =C@ ?A ?E @E A?@ 1AC! EA ?> F@ = =?E F@ AF@ = = @ AC @ I@1AC@ F@ 1= I =C@ = F=C>@E = DC ? D= 1@ A? F@C@ J = I@ @= @ ?? GF F = EA?@ = E 11@C@? J @ J = I@ @B E@? @ A1 =ZA ? ?> = 1AC ? =? @ 1A?@ G@C@ A 1 ?E F@ D = @ =?E A?@ F@ D=D@C =?E A?@ A EA F@ GAC< FA = = G= =ZA ? ?> I F@C@ ?A @B E@? @ A1 F= AC F@C@ F@C@ ?A @B E@? @ F= I A J JA?? A? @C F@ @ D=C @ E E F ?> 1 A?@ C <A11 F@ JDC@ A? =?E F@ A F@C G F@E F J A EA =?E F=C@E ?? F@ DCA1 F= GA E ?A J =<@ F@ J DC ? D= 1@ A? F ? =?? ?E J @? =>= ? = FC@@4 A J I@ = 1 @E F= F@ G@C@ = FC@@ DC@ @? = A?@ J @ AC = ?> ?? AJ @ G= = F= J @ @ F@C I G= F ?> = F@ EAAC AC AJ @ F ?> A1 F= AC =B ?> F@ ?A @ ?? DA @ A?? ?A 11 @? @B E@? @ A1 F=B ?> @E F@ D = @ ; = ?? F@ = @ A1 1AC>@E = @ @ J F=E F@ D = @ = @=C I@1AC@ I F= ?A @B E@? @ ?E@C F ?E J @? = F@ ?> ?E@C J I@ ? @ > 9 8 = =CC =?E * A @ EA ?A AJ @ A?? F@ =>@ F= J @ F@ A? @B E@? @ =>= ? =CC F@ ?@>A = A? F@ @? @C@E ? A G F = KJ =? =?E A F@C C@T D@ ?> F ?A @ ; F@C@ ?A DCAA1 A1 F F=B ?> F@ D = @ ?? F DA @ A? * A @ F=E ?? F DA @ A? =?E F@ DCAB@E A F=B@ = E I@1AC@! F= F@ F=E F@ D = @ =?E A E DC ? = J =? = F@ <@E ; F ?= I@ AJ @ F ?> <@ @B E@? @ A1 = 1 ?> A?? F D=C A1 F@ D = @ EA@ ?A @@ J A J @ F= F@C@ =? @B E@? @ A DCAB@ = ZA ? ?> = =? A?@ J @ GF F ? J AD ? A? ?@ @ =C A DCAB@ F ?E J @? ; A J = 1 ?E GA A1 F@ J > A? AC A?@ A1 F@ J > A? AC = FC@@ A1 F@ J > H N d

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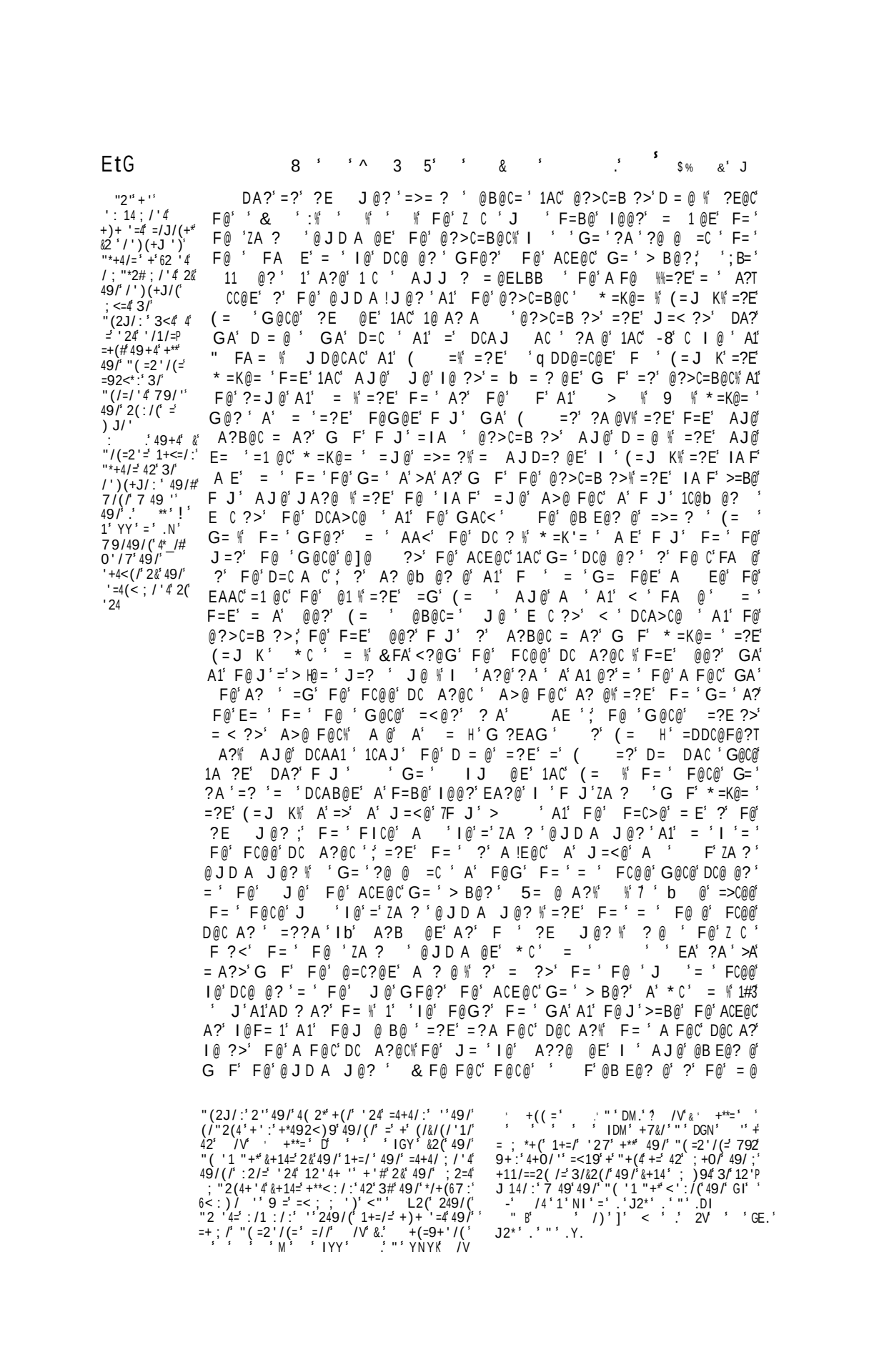

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' ' ? @?E@E' A' ? E@' IC ?> ?>' =?' = A?' A?' =? ' 1A $>@E' I ' A1'
@] F=?>@%' ?A @%' C1aC' A F@C' @ C ' 1AC' JA?@ ' F@' GACE ' 7DCA C@'
A' I@' E@ B@C@E' AC' D= E' A' =? 'D@C A?%H , %' G@C@' ? @C @E' ?' A E@C' A'
? E@' = @ ' GF@C@' A?@' D@C A?' I ' J @=? ' A1' =' 1AC>@E' ? C J @? '
= @ ' JA?@ ' A' I@' D= E' A' =?A F@C' D@C A?%' =?E' A' =BA E' F@' E 11 T
' GF F' F=E' =C @?' ?' F@' = @ ' = ' A' A I = ? ?>' JA?@ ' I ' 1= @'
DC@ @? @ %' N d

" B 24' */=' 49+'' * J/' #/+(=' &' 49/' EA' 79 19' (/*+4/=' 42' 234+ ' ')' ; 2 ' /#'
2&&/ '1/' 7+=' 12 ; ; 44/ :' +&4/(' 49/' GA49' 2&' <' : /(' &2()/ :' 7 **=' 2(' "(23+4/=' &(+7 *< '
<*#' .EYI ' //' J2*' . ' "' DH */ ' 4*#' 234+ ' / : ' =' 42' 9+(:' *+32<(' 1 '
B 9 =' 1*+<=/' =' &(+ ; / :' ' "+(4' &(2 ; ' =//' J2*' .' "' EM
49/' HE' ! /2' H' ' AH' =' G' W b' 79 19' "(2P W1b' //' /V' J' +J/**' ' ' ' ' '
J : /:'+)+ '=4' : / ; +' : ')' ; 2 ' /#2 ''&2()/ :' GG I?' /)' &' ! +((/44' .' /+(=' ' M ' GHG'
9+' O' '24/=' +' :' 49/' ..' ! /2' I ' 1' GM' = 6 y

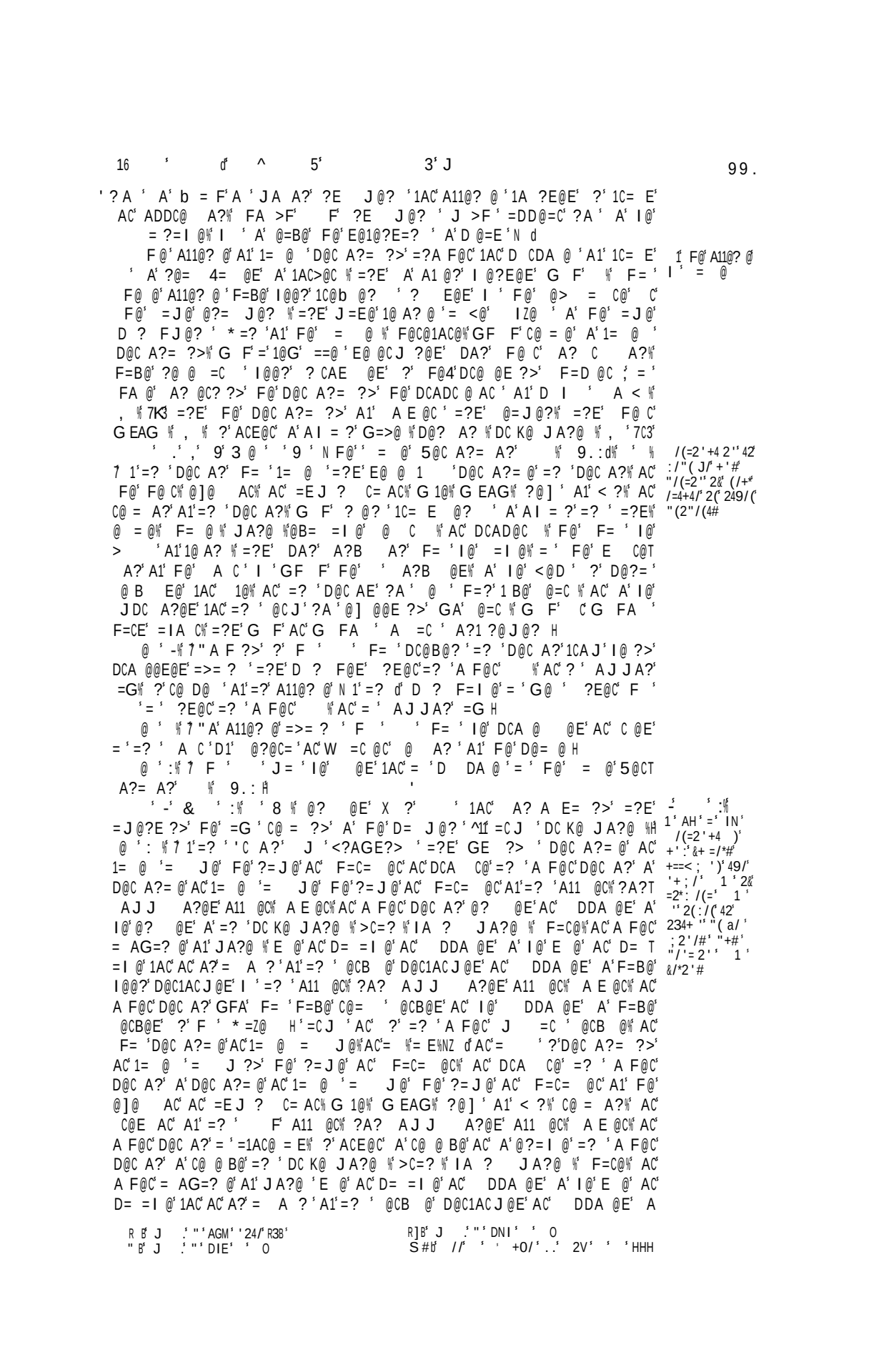
&&/ '1/' +4'
12 ; ; 2''*+7

' 3+(/' &+14' 2&' "/(=2 '+4 ')' + '249/(' &2(' 49/' "<("2=/' 2&' &(+<:'
=' '2' ; 2(/' 49+''' +' 19/+4' 2(' ; =: / ; /+ '2(' +4' 12 ; ; 2'' *+7' +':'
"<' =9+3*/' +=' =<19'" B' ':' 49/' "('1 "+*' 1+=/=' '' 79 19' 4'
9+=' 3// '' 12 '= : / (/ :' +=' ' : 14+3*/' 9+J/' 3// ''*+ :' +=' 1+=/=' 2&' 12 'P
=" (+1#

?' =' = @' GF@C@' F@' DC A?@C' F=E' I@@?' = b @E' A?' =?' ?E T
J @? ' DC@1@CC@E' =>= ? ' F J ' 1AC' 1AC>@C %' 'A?' ' =DD@=C ?>' F= '
F@' F=E' J @C@ ' D= @E' F J @ 1' A11' 1AC' F@' D@C A?' GFA @' C@= ' >?=T
C@' =DD@=C@E' A?' F@' ? C J @? %' ?' 4 "' G F' F= ' D@C A?%' N d
F@' G= ' ?E @E' =>= ?' 1AC' F@' &! # & 6 4"G' : > ' ! ' ! ' AI @CB@E'
F= ' F ' @ A?E' ?E J @? ' E E' ?A ' C?' ?> 'A?' F@' 1= ' A1' F'
1= @' D@C A?= ?>' 1AC' =' 1C= E @? ' D CDA @%' I ' G= ' 1C= J @E' =>= ? '
F J' =?E' F ' = A = @ ' 1AC' F@' A? D C= ' = ' G@ ' = ' F@' F@= %' 1 3'
B #' GF@C@' =' GA J =?%' B ?>' ?' F@' @CB @' A1' F@C' J = @C%' A?T
D C@E' G F' =?A F@C' J =?' F= ' F@' FA E' D@C A?= @' F@C' J = @C%' =?E'
?' F= ' F=C= @C' FA E' A @ J ? K@' =' J =CC =>@' G F' F@C%' GF F' G= '
= ACE ?> ' EA?@%' 1AC' F@' D CDA @' A1' =1 @CG=CE ' C= ?>' =' D@ A '
@' A' F@' DCAD@C ' A1' F@' J = @C;' F@' > ' A1' F@' ?E J @? '
G= ' 1AC' F@' A? D C= %' =?E' F @' A?B A?' DCA @@E@E' DA?' F= '
>CA ?E%' 1#3' ?E' ?' =' = ' ' GF@C@' =' F@= ' G= ' @11@ @E' I ' A?@'
D@C A?' DC@ @?E ?>' A' I @' =' J @C F=? %' =?E' =?A F@C' DC@ @?E ?>' A' I @'
=' ICA<@C%' G@' F=B@' @@?' F= ' Z E> J @? ' =DD@=C@E' J = @ ' A' F=B@'
I@@?' > B@?' 1AC' F@' CAG?%' A?' F@' >CA ?E' F= ' G= ' =' = @' A1'
A? D C= %' N@d' ' = @' FAG@B@C' ' C@DAC @E%' ?' GF F' F@' ?T
E J @? ' A? ' F=C>@E' F= ' F@' E@1@?E=? ' D@C A?= @E' =' @C<' A' =
Z @' A1' F@' D@= @%' G F' ? @? ' A' @] AC ' J A?@ ' 1CA J' @B@C=' '
D@C A? %' 1AC' DCA C ?>' F@ C' E F=C>@' 1CA J' J E@ J @=?AC ' 1AC'
GF F' F@ ' AAE' A J J @E;' =?E' F@' A C ' C@1 @E' A' b = F' '
DA?' J A A?%' =?E' D ' F@' E@1@?E=? ' A' E@ J C' A' ' N d' ' ' '
AI @CB@E%' F= ' ' J >F ' DCA I=I ' F=B@' A CC@E' A' F@' A C ' F= '
F4 ' G= ' A J @ F ?>' J AC@' F=?' =' I=C@' @?E@=BA C' A' A J J ' =
1C= E' I ' J @=? ' A1' 1= @ ' D@C A?= ?>' =?A F@C;' F= ' ' G= '=?'
= @ J D ' A' DA @' =?E' C@?E@C' AE A ' F@' D I ' Z @' A1' F@'
< ?>EA J %' I ' J =< ?>' ' =' F=?E @' =?E' DC@ @? @' 1AC' ACC D ' DC= T
@ '1s!3' AG' 1=C' F@' " *> 6 ' A' b = F' F@' ?E J @? ' DA?'
J A A?' =?' I @' A? E@C@E' = ' =?' = FAC ' ' b @ A?=I @;' = ' G@'
F=B@' @@?' F= ' ' G= ' F@' DC= @' A1' F@' A C %' = ' A1 @?' E@ =C@E

"\B' G' +=4' ' ' 1' GM' =' Y' "' .M.M
W{1' J .' "' YGN
W1' G' +=4' ' ' 1' GM' =' Y' "' .M.M'
9/' : /&/ ' : +' 4=' 7e[U 12 ' J 14/ :' <"2 '' 49 ='
=/12 ' :' ' : 14 ; / ' 4
B' /V ,' 23 '=2 ' ' .' /+19' ^D' G

+=4' ' M' 1' GM' =' Y' "' .M.M
1 3' /)' , ' +1O+(4#' 6 ' "' A.N
W wb' <"//$=' 1+=/' G' /==' +=' ' G'
+=4' ' ' 1' GM' =' Y' "' .M.M
123' G' +=4' ' ' 1' GM' =' Y' "' .M..



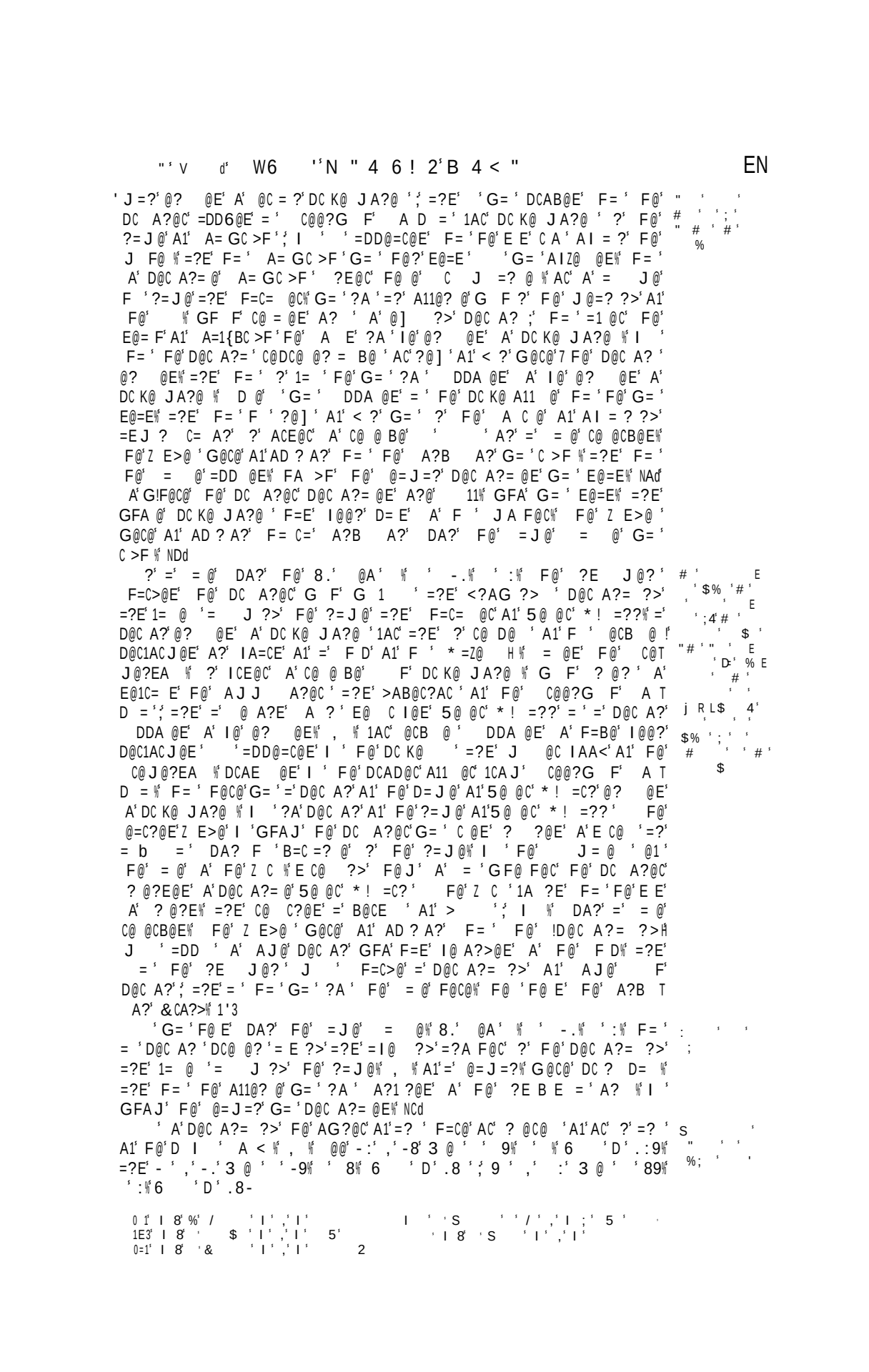
F=B@' I @@?' D@C1AC J @E' I ' =? ' F' A11 @C% ?A? A J J A?@E' A11 @C%''
A E @C% AC' A F@C' D@C A?' = ' =1AC@ = E' ;' = ' =?E' @B@C ' D@C A?' A'
A11@?E ?>% I @ ?>' F@C@A1' =G1 ' A?B @E% F= ' I@' =?E' =C@' =?E' '
F@C@I ' E@ =C@E' =?E' =EZ E>@E' A' I@' > ' A1' 1@ A? % =?E' F= 4' I@'
C=? DAC @E' I@ A?E' F@' @= ' 1AC' 1@% AC' 1AC' =? ' @C J '4? d' @ ' F=?'
@B@?' @=C % 1D 3 = ' F@' A C ' I@1AC@' GFA J ' F' D@C A?' AC' D@C A? '
F= ' I@' A?B @E' F= ' =EZ E>@ H 7o3

S% #$ ' ' -9' ,' - ' 3 @ ' -:' N F@' E J C= ' 5AG@C % ,N'% % 9 8d%
' ' @ ' 9 ' ! 1' =? ' D@C A?' ?' ACE@C' A' C@ @ B@' =? ' D= % G=>@ % = A T
$ ' J @? % DC K@' J A?@ % I A ? ' J A?@ % >C=? % AC' A F@C' = AG=? @' ?' F@'
?= C@' F@C@A1% F= 1' D= % D@? A?% AC' = AG=? @' 1C>J ' F@' AJD= T
A?= @' 1 ?E' A1' F@' ?=B % D= =I @' AC' DDA @E' A' I@' D= =I @' I ' F@'
=E J C= % AC' =? ' A F@C' J A?@ ' A' D= =I @' AC' DDA @E' A' I@' D= T
=I @% AC' =? ' @11@ ' AC' J A?@ ' ?' F= !>@' AC' DDA @E' A' I@' ?' F=C>@'
A1' F@' =E J C= % 1= @ ' =?E' E@ @ 1 ' D@C A?= @ ' =? ' D@C A?' @?T
@E' AC' DDA @E' A' I@' @? @E' A' C@ @ B@' F@' =J @% @B@C ' F'
D@C A?' F= ' I@' > ' A1' =' J E@ J @=?AC% =?E' I@ ?>' A?B @E'
F@C@A1' F= ' I@' =I @% =' F@' E C@ A?' A1' k @' A C % A' I@' <@D ' ?'
D@?= ' @CB E@' 1AC' =? ' @C J ' ?A ' @] @@E ?>' 1 B@' @=C % NJ d' AC' A' I@'
J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' @=C % G F' AC' G FA '
F=CE' =IA C% =?E' G F' AC' G FA ' 4 ! 6"' ' A?1 ?@ J @? % AC' A?' J '
J =C ' A?B A?' : *4" ' =' Z @% F@C 11' AC' J => C= @' F= ' I@'
=I @' A' I@' J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>']' J A? F %'
G F' AC' G FA ' F=CE' =IA C

&# ' E DA?' AJ @' A1' F@' 1AC J @C' = @ ' C@ = ?>' A' F@4' 1= @' D@C A?= T
' $% ' # ' ?>' A1' @=J @?% ' G=' ' E@ E@E% F= ' = ' F@' 1= @' D@C A?= ?>' J '
' $ ' L' I@' EA?@' ?' ACE@C' A' C@ @ B@' F@' G=>@ % , % A1' AJ @' @=J =?% , %
' ' ' ! #' 4"' >EE4 #' 4' < ' ! #' < " 4 ' F@C@' J 'ZZ@' AJ @' @B T
" ' ' # ' E@? @' A' F@G' F= ' F@C@' G= ' F' =' D@C A?' A1' F@' =J @' =?E' F=T
; ' ' ' C= @C' = J @E% GFA' G= ' @ F@C' @? @E% AC' J >F ' E"!& 6 ' *6 ! ' = '
8 @= ' I@' DDA @E' A' I@' @? @E' A' C@ @ B@' F@' G=>@ % , % = @ J D @E'
A' I@' = b C@E ' F ' GF@C@' F@' DC A?@C' G= ' ?E @E' A?' Fu' '
@A ' -% ' W% 1AC' D@C A?= ?>' =?E' 1= @ '!H= J ?>' F@' ?= J @' =?E'
F=C= @C' A1' & J ' & F@@ @C% =' D@C A?' DDA @E' A' I@' @? @E' A'
DC K@ J A?@ % 1AC' @CB @' EA?@' A?' I A=CE' F ' * =Z@ H ' F D' @CD '
FDC@% ?' ACE@C' A' C@ @ B@' @C = ?' DC K@ J A?@ % , % A?@' A1' F@'
AIZ@ A? ' =<@?' =1 @C' A?B A?' G= % F= ' F@C@' G= ' ?A' @B E@? @'
F= ' & C= ' & F@@ @C' @B@C' @CB@E' A?' IA=CE' F@' @CD FAC@' ?' =? '
=D= % AC% ?E@@E% F= ' =? ' F' D@C A?' @] @E' ;' =?E' F@' Z E>@ %
=1 @C' =' A?1@C@? @% F@ E' F= ' F@' A?B A?' G= ' GCA?>% F@C@' I@ ?>'
?A' @B E@? @' F= ' F@C@' G= ' =? ' F' D@C A?' = ' & J ' & F@@ @C% GFA'
@1 F@C' G= ' @? @E% AC' = ' @= 'E"!& _ *6 ! '@? @E% A' DC K@ J A?@ '
= ' =' @=J =?' A?' IA=CE' F@' @CD FAC@% 1 3

S ' ?' = @' DA?' A?@' A1' F@' 1AC J @C' = @ % 8 :' @A ' % ' % '9 %
' %$ ' F@' ?E J @?' F=C>@E' F@' DC A?@C' G F' D@C A?= ?>' =?E' 1= @ '
' $ ' ' = J ?>' F@' ?= J @' =?E' F=C= @C' A1' A?@' A F =' A= GC >F % =' @=
' "#

1 3' S ' 7 % ' ' ' ' ' 4' ! ' ' ' ' ' 7 ' ' ' 5 ' 2 ' #'
$' ' ' # ' 7 ' 4 ' ' # ' $ ' ' ' ' ' # ' ')A ' '
' " ' $ $ ' ' ' .% 4 ' ' ' 6 ' ' 5
' 7 ' ' ' 5 ' ' ' ' ' ,' -' ! ' 0$ 1' * ' ' # ' 7 '4 ' '7 ' '
' ' ; ' ' ' ' ' ' $ $ ' 5W
! 3' &# ' ' BA ' ' ' ' ' ' 7 ''G " ' ' ' 3 ' S ' ' ' '
8 ' 7 ' ' # ' % #$ ' ' ' ' ' --5' 2' S' ' A : 4 ' '
' ' # ' ' <% 4' ; ' ' --
4' ' % # ; ' % ' # ' ' '



A D@C A?= ?>' F@ AG?@C A1 =? F=C@ AC ? @C@ A1 AC ?a
?E = A < , @@ - ' , - . 3 @ . : 6
S , 9 3 @ N F@ AJD=? @ 9 .d 8 GFAT
" @B@C 1= @ =?E E@ @ 1 D@C A?= @ =? AG?@C A1 =? F=C@E AC
% ? @C@ A1 AC ?' =? AJD=? AC A1 =F F=C@ G=C C AC A DA?
9 $ @E ?' D C =? @ A1 F B =?E F@C@I AI = ? AC @?E@=BA C
: 5 A AI = ?' =? F F=C@ AC ? @C@ AC F=C@' G=CC=? AC A DA?
AC C@ @ B@ AC @?E@=BA C A C@ @ B@ =? JA?@ E > A =? F
AG?@C = 1 F A11@?E@C G@C@ F@ C @4=?E =G1 AG?@C F= I@
> A1 1@ A? =?E I@ > A?B @E F@C@A1 F= I@ =I @ = F@
E C@ A?' A1 F@ A C A I@ <@D ?' D@?= @CB E@ 1AC 1@ AC 1AC
=? @C J ?A @ F=?' 1 B@ @=C AC A I@ JDC A?@E 1AC =?
@C J ?A @] @@E ?>' GA @=C G F AC G FA F=CE =IA C =?E
G F AC G FA A =C A?1 ?@J@?
S 7 X A D@C A?= A?' A1 BA @C = D=C = J @? =C =?E J ? D= @ @ T
A? @@ BA DD :
?A =?' A11@? @ ?E@C A1 F@ :, 8 3 @ 8 A
D@C A?= @ =' BA @C GFA E@=E 1 3 K
-9 3 @ N F@ A ? 3A @C @> C= A?'
4 9 8d =? D@C A?' 1= @ AC 1C= E @? >? ?>' =? F E@ =C=T
$ A?' = J @? A?@E ?' A1 F= B [?' < ?= J @' 4 *=? A F@C
! I E D@C A?' GF@ F@C F E " 4 F= : B ?>' 4"' # 6# =?E' @B@C
: D@C A?' C=? J ?>' = >@? ?@' =? 1= @' AC 1= 1 @E' E@ =C= A?
<?AG ?>' F@' = J @' A' I@' 1= @' AC 1= 1 @E =?E' =? D@C A?' <?AG $
?> =?E' G 1 J =< ?>' =? 1= @' = @ J @? A1 1= ?' F E@T
=C= A?' F= I@' > A1 = J E@ J @=?AC =?E' D ? F=I @' I 1 ?@'
AC J DC A? J @? 1AC =' @C J ?A @] @@E ?>' A?@' @=C =?E' F@' C@B T
?>' I=CC @C' F= F=B@' DAG@C' A' J DA ?E' =? F E@ =C= A?
: " E F@' -: , -8 3 @ 9 : 7GFA A@B@C 'R! FA =GT
1 = FAC AC @] @' N F@' DCAA1' GF@C@A1' F= @' A?' F@' D=C
R ; = @Ed F= ?' F@' ?= J ' A1 =? A F@C' D@C A?' = <?AG @E>@'
7 # $ =? C@ A>? K=? @' AC I= AC =? A>?AB = A?@J AC Z E>J @? '
AC =? E@@E' 4"' 4 < "' ! ">& I@1AC@4=? A C Z E>@' AC A F@C
D@C A?' =G1 = FAC K!@E' ?' F= I@F= 1' F= I@' A1 1@ A? '
=?E' I@ ?>' A?B @E' F@C@A1' F= I@' =I @' = F@' E C@ A?' A1
F@' A C A' I@' <@D ?' D@?= @CB E@' 1AC =? @C J ?A @] @@E ?>'
@B@?' @=C =?E' ?A @ F=?' FC@@' N d @=C ` AC A' I@' JDC A?@E'
1AC =? @C J ?A @] @@E ?>' GA @=C G F' AC G FA F=CE'
=IA C =?E' G F' C G FA A =C A?1 ?@J @? H N d
?' F@' A? C A?' A1' F@' - = - ' N?AG' C@D@= @Ed
G= FA E@C0' F= F@' I=C@' D@C A?= ?>' A1' I= I@1AC@' =' Z E>@' = '
F=J I@C AC F@' = <?AG @E> ?>' F@C@A1' ?' =?A F@C' ?=J @ G= ?A'
1@ A? I A? =' J E@J @=?AC ? @ F@' I= G= 1 @E 7 3

1 3 A / 4 # 8 " # . &# 7 4 % R E
-5 ; " 4 L'
13 + # 7 4 # " # # ; " 4 L'
$ $ # # 7 4 7 L'
.% 4 7 5
0 / 1 &# $ $' # % % R E
A &# '" $ R ; ; J =% $ =% E
% 2 - $ # $ $ 4 # '
0> 1 : # ; % , 7 74'
- # $ # ; =% '
1 3 F & $; 4 &# '" # "' % '
- F " S 5' % 4 # R ; '
3 S -- &# ; - 2 9

' @ =DD@=C ?AD@ = @ F= F@ A 1@? @ G= A? E@C@E = A J D @ @ I F@ D@ A?= ?>;% = % FA >F F@ I= D @ @ G= 1 @E = & @ J ? @C% F@ C = G= F=E ?' A?EA?% F@ A ? GF@C@ F@ I= G= D@C A?= @E% 753 @@ J F= 1 I= G@C@ D ?' ?E@C 1@ >?@ ?= J @ A1 D@C A? GFA F=E ?A @] @? @% F@ A11@?E@C A E ?A I@ DCA @ @E DA?' F C@D@= @E = @ 1AC 1@ A? % 1?3

G 4 & . 8 "# # ; L " G # S G% 3 4 ; !! 4"6&'#4&! 4'" 2 , S - - ?' 7 001 : 2 F " ' S # # # $ 5 G% # % # ! 0 & 2 >1 &" # ; # . # $% ; / ? # 4

' ' L

' / : > > J2' >*. J3>32' & ' SI S3I&V

& '?AG' AJ@' A' F@' A? E@C= A?' A1' FA @' ?Z C @ ' A' DCAD@C ' GF F' DCA @@E' C= F@C' 1CAJ' J= A 'AC' G=? A?' JA B@ ' F=?'1CAJ' =? ' DCADA @E' >= ?' A' F@' A11@?E@C' ?Z C @ ' A1' F '< ?E' G@C@ J=E@' D ? F=I @' I 'E 11@C@?' = @ 'D= @E' 1CAJ' J @' A' J@ ' =' F@ '=DD@=C@E' A' I@' C@b C@E' 1AC' F@' DCA @ Z'A?'A1' F@' AJ J ? ' I ' F@' DCAB A? ' A? = ?@E' ?' F@ @' = @ ' =C@' ?AG' =J@?E@E' =?E' A? A E= @E' ? A' A?@' = @

F@' @B@C= ' @?= J@? ' A1' F ' = @'G ' I@' J@? A?@E' ?' F@' @@E ?>' F=D @C ' ?' F' =CC=?>@J@? ' = ' J = ' @@J' &4 ' =DT DCADC = @'$ I ' ' >@?@C= ' DCAB A? ' J = ' I@' DCAD@C ' = @E' ?' F@' 1C ' ? =? @

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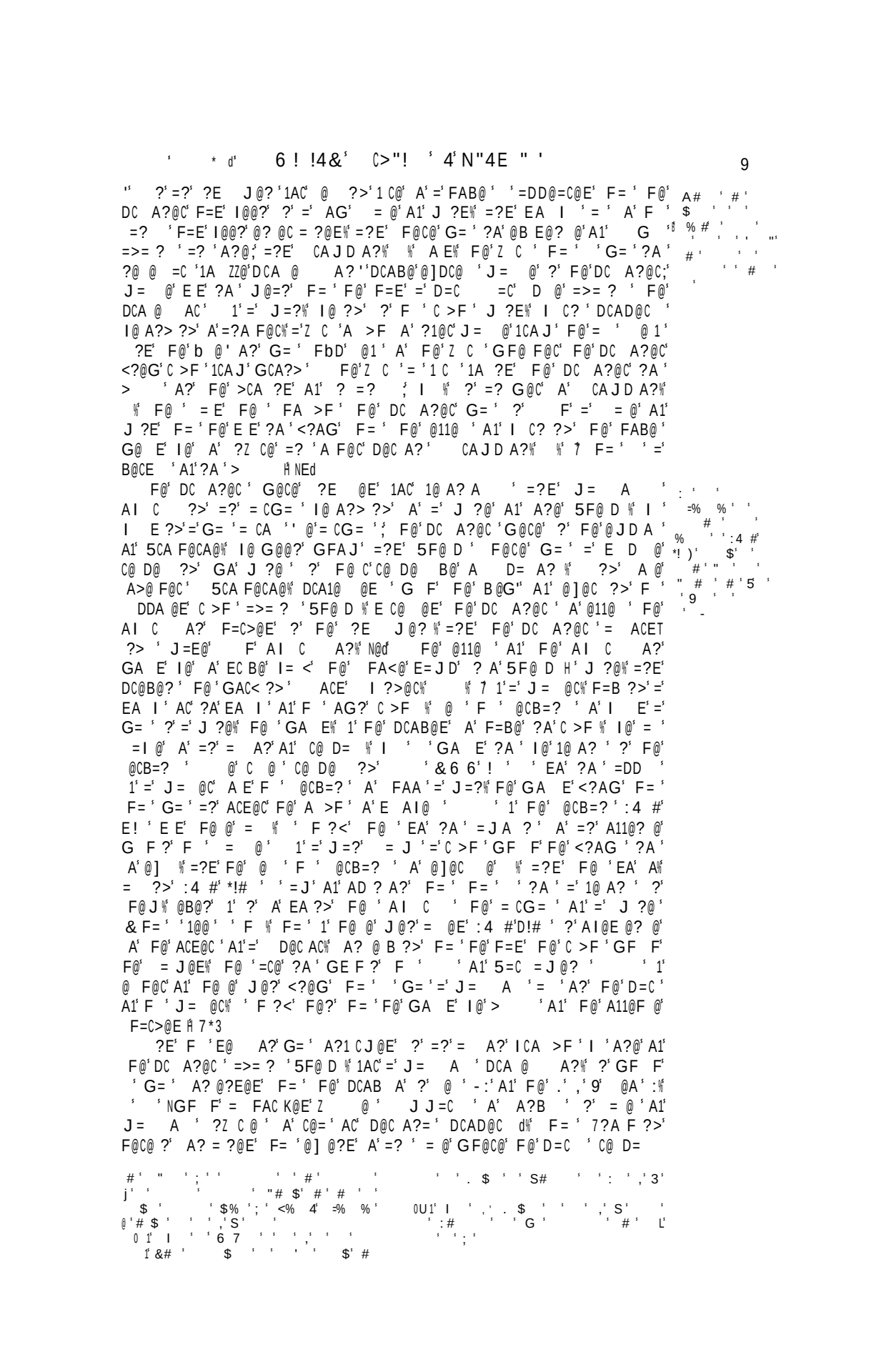

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burning such other house. (*m*) So it has been held that if a person set fire to a stack, the fire from which is likely to communicate to a barn, and it does so, and the barn is burnt, he is in point of law indictable for setting fire to the barn. (*n*) So where the prisoners set fire to a summer-house which was in a wood, and some of the trees overhung it, and their branches were burnt by the fire, which consumed the summer-house and also burnt some of the trees, it was held that the prisoners might be convicted under the 7 & 8 Geo. 4, c. 30, s. 17, of setting fire to the wood. (*o*)

It may be effected by setting fire to the party's own house.

And such malicious and wilful burning of the house of another may be by the means of setting fire to the party's own house; and this, though it should appear that the primary intention of the party was only to burn his own house. If in fact other houses were burnt, being adjoining, and in such a situation as that the fire must in all probability reach them, the intent being unlawful and malicious, and the consequences immediately and necessarily following from the original act done, the offence will be felony. (*p*) Thus where the defendant was indicted for a misdemeanor, in burning a house in his own occupation, such house being alleged to be contiguous and adjoining to certain dwelling-houses of divers liege subjects, &c.; and the facts of the case, as opened by the counsel for the prosecution, appeared to be that the defendant set fire to his own house, in order to defraud an insurance office, and that in consequence several houses of other persons, adjoining to his own, were burnt down; Buller, J., said that if other persons' houses were in fact burnt, although the defendant might only have set fire to his own, yet under these circumstances the prisoner was guilty, if at all, of felony (the misdemeanor being merged) and could not be convicted on this indictment; and, therefore, he directed an acquittal. (*q*) And in a case of a similar kind, which occurred about the same time, Grose, J., in passing sentence in the Court of King's Bench, said, that if it had so happened that any of the neighbouring houses had been set on fire in consequence of the defendant's wilful and malicious act in setting fire to his own house (which was proved to have been done in order to cheat the insurance office), it would clearly have amounted to a capital felony. (*r*)

(*m*) Plowd. 574. 2 East, P. C. c. 21, s. 7, p. 1031.

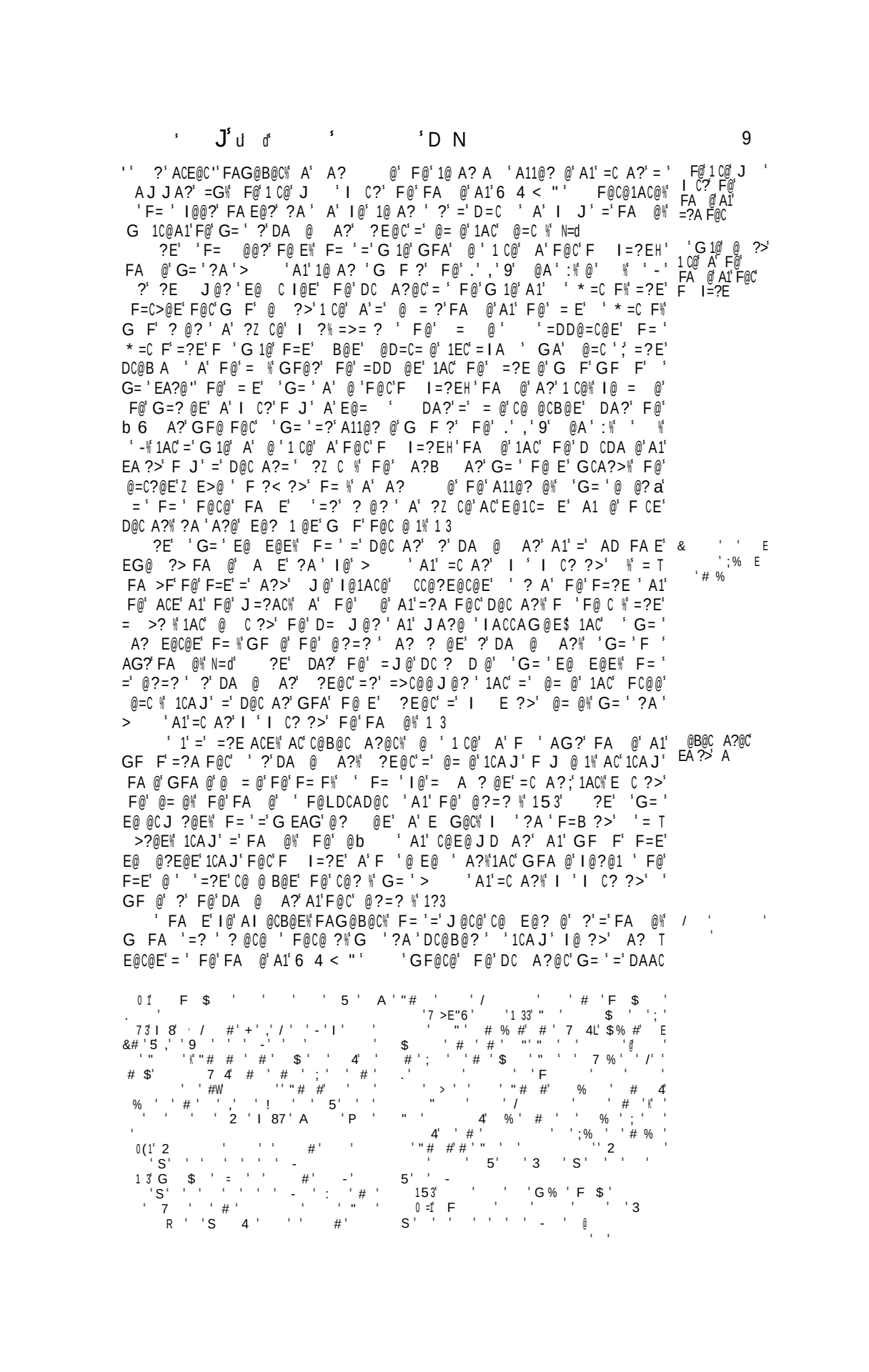
(*n*) Rex *v.* Cooper, 5 C. & P. 535, Parke, J. Lord C. J. Tindal, in his charge to the Bristol grand jury, 1832, 5 C. & P. 266, note, said, 'Nor will it be necessary to prove that the house, the subject of the indictment in any particular case, was that which was actually set on fire by the prisoner. It will be sufficient to constitute the offence if he is shewn to have feloniously set on fire another house, from which the flames communicated to the rest. No man can shelter himself from punishment on the ground that the mischief which he committed was wider in its consequences than he originally intended.' See Curtis *v.* The Hundred of Godley, 3 B. & C. 248. But in Turner's case, 1 Lewin, 9, it is said that Parke, J., left it to the jury whether the prisoner intended by setting fire to a stack of haulm to set fire to a building close adjoining, and that the judges were of opinion this direction was right. In R. & M. C. C. R. 239, this point is not noticed, and it is at variance with all the other authorities.

(*o*) Reg. *v.* Price, 9 C. & P. 729, Gurney, B. The summer-house in this case was not a building, the burning whereof was then a felony.

(*p*) 2 East, P. C. c. 21, s. 8, p. 1031. And see the case of Coke *v.* Woodburne, 6 St. Tri. (by Hargr.) 222.

(*q*) Isaac's case, *cor.* Buller, J. 2 East, P. C. c. 21, s. 8, p. 1031. But see now the 14 & 15 Vict. c. 100, s. 12; vol. 1, p. 62.

(*r*) Probert's case, 2 East, P. C. c. 21, s. 7, p. 1031.



man, maintained by a parish, and had, some time before the commission of the crime, been put by the parish officers to live in the house which he was charged with burning, and was resident therein with his family at the time of the fact being committed, having the sole possession and occupation of it, but without payment of any rent: all the judges held that it could not be considered as *his* house; and that he was properly convicted of the arson. (*y*)

It will be presently seen that the questions as to the possession and ownership of the house in which the arson is committed, are of less importance under the statute law; as the 24 & 25 Vict. c. 97, makes the setting fire to a house, &c., *with intent to injure or defraud any person*, a felony, whether such house, &c., shall be in the possession of the person so setting fire thereto, or of others.

Of what is included in the term house.

The remaining inquiry concerning arson at common law is as to the meaning of the word *house*. And this, it may be briefly observed, extends not only to the dwelling-house, but to all outhouses, which are *parcel* thereof, though not adjoining thereto, or under the same roof; (*z*) of which kind of outhouses mention has been made in a former part of this work. (*a*) It appears that the indictment need not charge the burning to be of a *mansion* house, but only of a *house*. (*b*)

Misdemeanor in burning a man's own house, when contiguous to others.

It has been already stated that the burning a man's own house in a town, or so near to other houses as to create danger to them, though not within the definition of arson, is yet a great misdemeanor at common law. (*c*)

Sec. II.

Present Enactments.

Setting fire to a church or chapel.

By the 24 & 25 Vict. c. 97, s. 1, 'whosoever shall unlawfully and maliciously set fire to any church, chapel, meeting-house, or other place of divine worship, shall be guilty of felony, and being convicted thereof shall be liable, at the discretion of the court, to be kept in penal servitude for life or for any term not less than three (*d*) years—or to be imprisoned for any term not exceeding two years, with or without hard labour, and with or without solitary confinement, and, if a male under the age of sixteen years, with or without whipping.' (*e*)

(*y*) Gowen's case. 2 East, P. C. c. 21, s. 6, p. 1027. Rickman's case, ibid. s. 11, p. 1034.

(*z*) 3 Inst. 67. 1 Hale, 570. 1 Hawk. P. C. c. 39, s. 1. Sum. 86. 4 Black. Com. 221. 2 East, P. C. c. 21, s. 5, p. 1020. See Surman *v.* Darley, 14 M. & W. 181.

(*a*) *Ante*, pp. 15, 70.

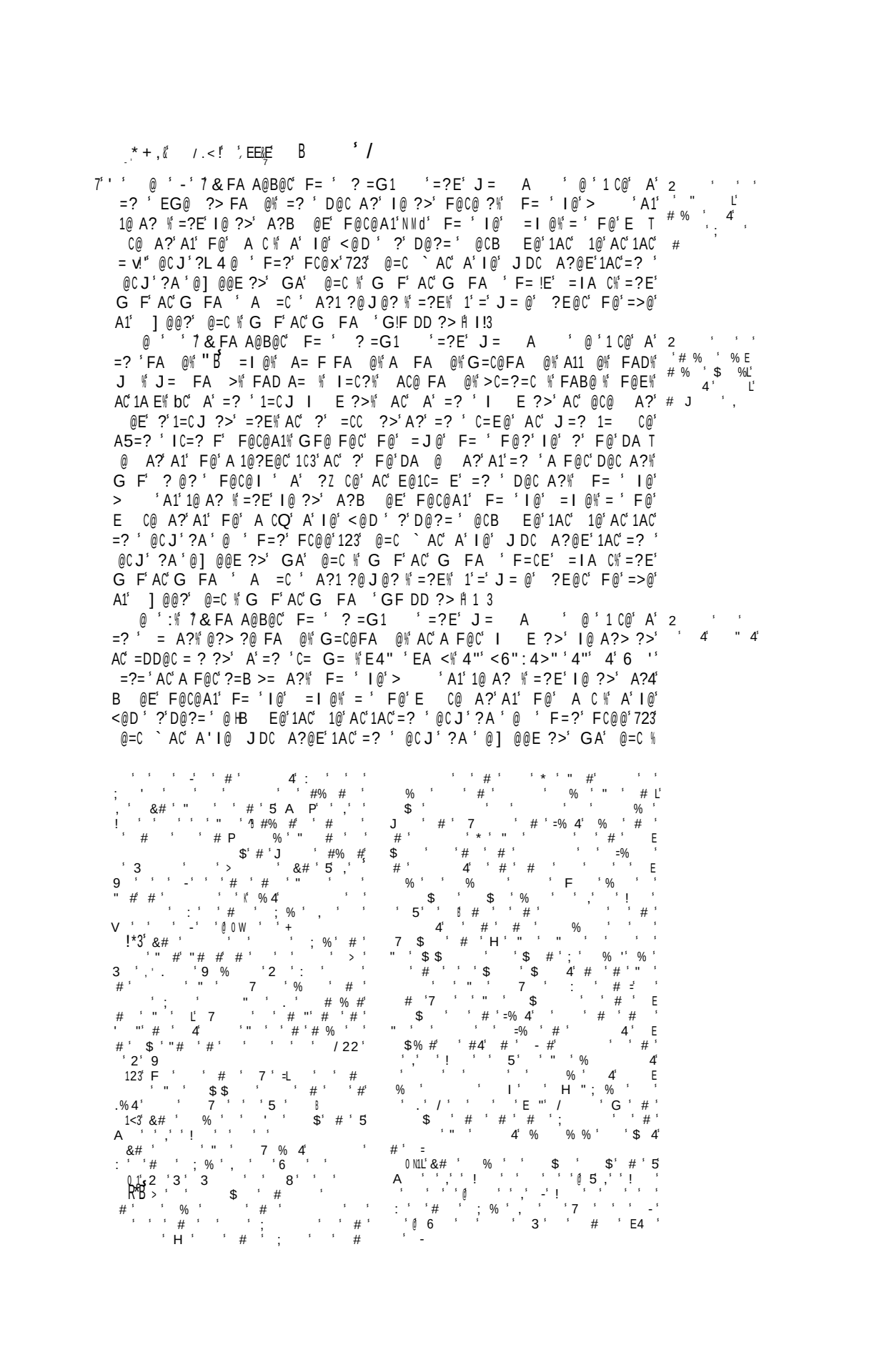
(*b*) 3 Inst. 67. Sum. 86.

(*c*) *Ante*, p. 898. Holmes's case, Cro. Car. 376. Scofield's case, Cald. 397. 2 East, P. C. c. 21, s. 6, p. 1023, and s. 7, p. 1028. It appears from these cases that where an indictment charges an act to have been done with a *felonious* intent, and the jury find a verdict of guilty; if the charge, as laid, do not amount to felony, but amounts in law to a misdemeanor, the court will pronounce judgment as for that offence. See Probert's case, 2 East, P. C. c. 21, s. 7, p. 1030.

(*d*) Not less than five years, if the offence was committed after the 25th July, 1864, see vol. 1, p. 73.

(*e*) This clause is taken from the 7 Will. 4 & 1 Vict. c. 89, s. 3, and 9 & 10 Vict. c. 25, s. 9.

The words 'church, chapel, meeting-house, or other place of divine worship,' are taken from the 9 Geo. 4, c. 55, s. 10 (I.), and thus the terms of this clause are made the same as those in sec. 11,



with or without hard labour, and, if a male under the age of sixteen years, with or without whipping.' (*l*)

Setting fire to any public building.

Sec. 5. 'Whosoever shall unlawfully and maliciously set fire to any building other than such as are in this Act before mentioned, belonging to the Queen, or to any county, riding, division, city, borough, poor law union, parish, or place, or belonging to any university or college, or hall of any university, or to any inn of court, or devoted or dedicated to public use or ornament, or erected or maintained by public subscription or contribution, shall be guilty of felony, and being convicted thereof shall be liable, at the discretion of the court, to be kept in penal servitude for life or for any term not less than three (*ll*) years—or to be imprisoned for any term not exceeding two years, with or without hard labour, and, if a male under the age of sixteen years, with or without whipping.' (*m*)

Setting fire to other buildings.

Sec. 6. 'Whosoever shall unlawfully and maliciously set fire to any building other (*n*) than such as are in this Act before mentioned shall be guilty of felony, and being convicted thereof shall be liable, at the discretion of the court, to be kept in penal servitude for any term not exceeding fourteen years and not less than three (*ll*) years—or to be imprisoned for any term not exceeding two years, with or without hard labour, and, if a male under the age of sixteen years, with or without whipping.' (*p*)

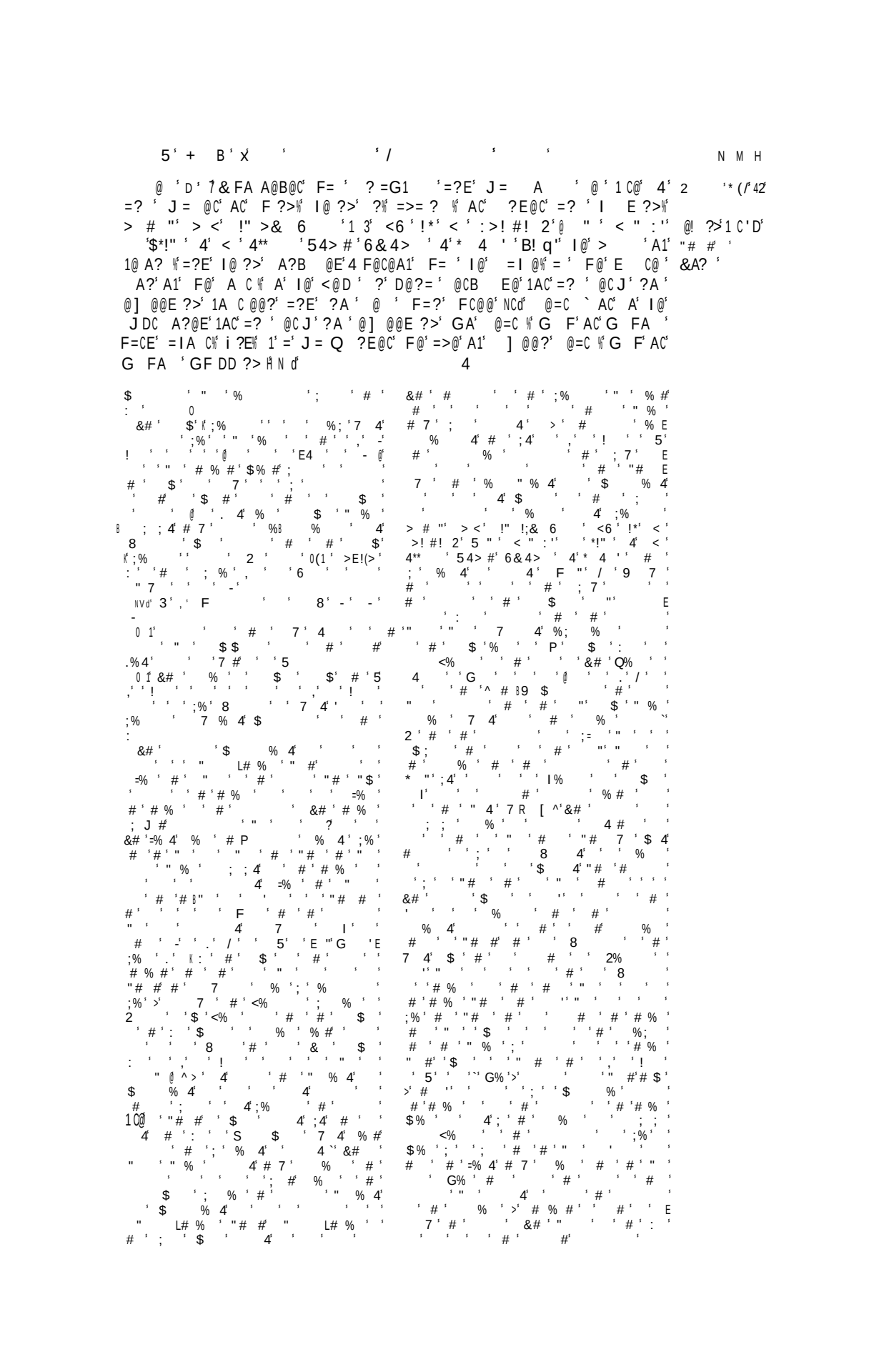
(*l*) This clause is taken from the 14 & 15 Vict. c. 19, s. 8, and extended to buildings belonging to ports and harbours. As to hard labour, &c., see *ante*, p. 895; vol. 1, pp. 80, 81.

(*ll*) Not less than five years if the offence was committed after the 25th July, 1864, see vol. 1, p. 73.

(*m*) This clause is new. Before this Act passed there was no statute applicable to the burning of any public building, however important, unless it could be held to fall within the term 'house.' See Donnavan's case, 1 Leach, 69. As to hard labour, &c., see *ante*, p. 895; vol. 1, pp. 80, 81.

(*n*) An unfinished house, brick built, of which all the walls external and internal were built and finished, the roof on and finished, the flooring of a considerable part laid, and the internal walls and ceilings prepared for plastering, is a building within the meaning of the 24 & 25 Vict. c. 97, s. 6, the setting fire to which is made a felony. R. *v.* Manning, 41 L. J. M. C. 11, *et per* Kelly, C. B., the question turns upon the 6th section of the 24 & 25 Vict. c. 97. Now the 3rd section throws light upon this section, for it enacts that 'whosoever shall unlawfully and maliciously set fire to any house, stable, coachhouse, outhouse, warehouse, office, shop, mill, &c., or shall be,' &c. The argument might be urged that these several buildings thus enumerated in the 3rd section are all completed buildings, and therefore, that the buildings referred to in the 6th section must be *ejusdem generis* and a completed building, but this is not so in fact, as the enumeration of buildings in the 3rd section includes buildings which may form part of a structure. Take, for example, an office which may form part of a house, and may be a complete office on the ground floor, whilst the house above it may not be completed. So again, a shop may be part of a house consisting of a shop with upper floors intended for residence, as for lodgings, or for other purposes. There the shop or office would be within the 3rd section. Then there being nothing in the 3rd section to limit its operation to completed buildings, the 6th section is extended to buildings other than such as are before mentioned. It is to be observed that the expression used is, 'any building other' and not 'any other building.' I think, therefore, that the ruling of the learned judge was correct, and that it was a question for the jury. This building was a building fairly and substantially within the meaning of the Act of Parliament. I say nothing as to what extent of partial building would be necessary to satisfy the Act of Parliament. It may be that in a case where the walls of a house have been only raised two or three yards it may not amount to such a building, but I give no opinion upon this matter. I limit my judgment to the case before us.

(*p*) This clause is new. It will include every building not falling within any of the previous sections of the Act. It will include ornamental buildings in parks and pleasure-grounds, hothouses, pineries, and all those buildings which, not being within the curtilage of a dwelling-house, and not falling within any term previously



Attempting to set fire to buildings.

Sec. 8. 'Whosoever shall unlawfully and maliciously by any overt act attempt to set fire to any building *or any matter or thing in the last preceding section mentioned, under such circumstances that if the same were thereby set fire to the offender would be guilty of felony,* shall be guilty of felony, and being convicted thereof shall be liable, at the discretion of the court, to be kept in penal servitude for any term not exceeding fourteen and not less than three (*t*) years—or to be imprisoned for any term not exceeding two years, with or without hard labour, and with or without solitary confinement, and, if a male under the age of sixteen years, with or without whipping.' (*u*)

Destroying or damaging a house with gunpowder, any person being therein.

Sec. 9. 'Whosoever shall unlawfully and maliciously, by the explosion of gunpowder or other explosive substance, destroy, throw down, or damage the whole or any part of any dwelling-house, any person being therein, or of any building whereby the life of any person shall be endangered, shall be guilty of felony, and being convicted thereof shall be liable, at the discretion of the court, to be kept in penal servitude for life or for any term not less than three (*t*) years—or to be imprisoned for any term not exceeding two years, with or without hard labour, and with or without solitary confinement, and, if a male under the age of sixteen years, with or without whipping.' (*v*)

Attempting to destroy buildings with gunpowder, &c.

Sec. 10. 'Whosoever shall unlawfully and maliciously place or throw in, into, upon, *under,* against, or near any building any gunpowder or other explosive substance, with intent to destroy or damage any building, or any *engine,* machinery, working tools, fixtures, goods, or chattels, shall, whether or not any explosion

those who prepared it have narrowed the effect of the section, instead of extending it.'

The prisoners were indicted for setting fire to certain post letters in a dwelling-house, divers persons then being in the said house, against the 24 & 25 Vict. c. 97, s. 7; there were other counts framed on the 8th section of the Act. One prisoner was sixteen years of age, the other eighteen, and they were seen opposite a post-office, the letter box of which is upon the floor under the shop window ledge, and letters are dropped in from the slit outside. Both went close to the box, and the younger was about to drop in the remains of a paper he had lighted from his pipe, when the elder said, 'What the devil is the use of that? It is not half big enough.' He then lighted a larger piece, and dropped both pieces through into the box. Both ran away. The pieces of paper partly burnt twenty-nine letters. Williams, J., 'How can you support this indictment? From the evidence it appears that this act on the part of the prisoners was what is vulgarly called a lark, and that there was no intention to set fire to the house. . . . No doubt, if they intended the fire to do its worst, they would be guilty, but if they only set fire to the letters, and it was contrary to their intention to burn the house, even if the house had been burned, they would not have been guilty. I shall so leave the case to the jury.' Reg. *v.* Batstone, 10 Cox, C. C. 20.

As to hard labour, &c., see *ante*, p. 895, and vol. 1, p. 80, 81.

See the note to the next subsequent section.

(*t*) Not less than five years if the offence was committed after the 25th July, 1864; see vol. 1, p. 73.

(*u*) This clause is taken from the 9 & 10 Vict. c. 25, s. 7.

The words 'or any other matter or thing in the last preceding section mentioned,' were introduced by the Committee of the Lords in order to refer to the words 'any hay, straw, wood, or other vegetable produce, coal, turf, or other matter or thing,' which were then in the preceding section; but the Select Committee of the Commons struck out all those words except 'matter or thing.' The words of reference in this clause must, therefore, now be read 'any matter or thing in, against, or under any building.'

As to hard labour, &c., see *ante*, p. 895; vol. 1, pp. 80, 81.

(*v*) This clause embodies the 9 & 10 Vict. c. 25, ss. 1, 2. Under sec. 2 of that Act, where life was endangered, the offence was capital. As to hard labour, &c., see *ante*, p. 895. See the 24 & 25 Vict. c. 100, s. 12, vol. 1, p. 912, and other clauses, ib. p. 953.

take place, and whether or not any damage be caused, be guilty of felony, and being convicted thereof shall be liable, at the discretion of the court, to be kept in penal servitude for any term not exceeding fourteen and not less than three (*vv*) years—or to be imprisoned for any term not exceeding two years, with or without hard labour, and with or without solitary confinement, and if a male under the age of sixteen years, with or without whipping. (*w*)

12 Geo. 3, c. 24, s. 1, wilfully setting on fire, &c., ships of war, arsenals, &c., timber, &c., or stores of war.

The 12 Geo. 3, c. 24, s. 1, enacts, 'that if any person or persons shall either within this realm, or in any of the islands, countries, forts, or places thereunto belonging, wilfully and maliciously set on fire, or burn, or otherwise destroy, or cause to be set on fire, or burnt, or otherwise destroyed, or aid, procure, abet, or assist in the setting on fire, or burning or otherwise destroying of any of his Majesty's ships or vessels of war, whether the said ships or vessels of war be on float, or building, or begun to be built, in any of his Majesty's dock-yards, or building or repairing by contract in any private yards, for the use of his Majesty, or any of his Majesty's arsenals, magazines, dock-yards, rope-yards, victualling offices, or any of the buildings erected therein, or belonging thereto; or any timber or materials there placed for building, repairing, or fitting out of ships or vessels; or any of his Majesty's military, naval, or victualling stores, or other ammunition of war, or any place or places where any such military, naval, or victualling stores, or other ammunition of war, is, are, or shall be kept, placed, or deposited; that then the person or persons guilty of any such offence,' being thereof convicted, in due form of law, shall be adjudged guilty of felony, and shall suffer death as in cases of felony without benefit of clergy. (*x*)

Trial in any county, place, &c.

By the second section of this Act, any person who shall commit any of the offences before mentioned out of the realm, may be indicted and tried either in any county within the realm, or in such island

(*vv*) Not less than five years if the offence was committed after the 25th July, 1864; see vol. 1, p. 73.

(*w*) This clause is taken from the 9 & 10 Vict. c. 25, s. 6. As to hard labour, &c., see *ante*, p. 895, vol. 1, p. 80, 81. The prisoners were indicted under this section for damaging the house of J. Gate by the explosion of gunpowder, J. Gate and his wife being therein. In Cumberland there is a custom in country places, when a wedding has taken place, for the neighbours to assemble with guns, and fire a kind of *feu de joie* in honour of the event, the bridegroom or his friends treating them. In pursuance of this custom the prisoners and others went with a gun thus to celebrate the marriage of Gate's daughter with one Noble. On arriving at Gate's house they asked for drink, and said they had come to shoot. Noble treated them to beer, and gave the one who had the gun 2*s.* 6*d.* not to fire. Having got the beer they wanted something to eat, but were put out of Gate's house. They then began to fire the gun; at first in front of the house; then they fired under the door, filling the house with smoke. They fired off the gun next through the keyhole of the door, and, being out of percussion-caps, applied a candle to the nipple for the purpose. The effect of this shot was to drive the key with great violence into the house, cutting the arm of Mrs. Gate, and knocking Gate insensible off his chair, by striking him on the head. It also blew the lock of the door to pieces, and split the door. The prisoners were afterwards very abusive and violent on the inmates rushing out to capture them and their gun. Martin, B., was of opinion that the statute was not meant to apply to such a case as this, but rather to malicious injuries to houses, by placing or throwing explosive substances against or into them, with intent to destroy the house or injure the inmates. This was more in the nature of wanton mischief or assault, and he directed an acquittal. Reg. *v.* Brown, 3 F. & F. 821. If this case is correctly reported, it deserves reconsideration. C. S. G.

(*x*) This offence is still capital, 7 & 8 Geo. 4, c. 28, ss. 6 & 7. As there is no express provision for the punishment of accessories after the fact, they are punishable under the 24 & 25 Vict. c. 94, s. 4, vol. 1, p. 176.

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(>I J@? A?@E ?F@ ?E J@? G= F@ <@@D@C A1 F@ >=A ;
=?E =DD@=C@E F= F EG@ ?> FA @ =EZA ?@E A F@ >=A =?E
G= ?F=I @E I F ?Z@@ 1 =?E I =??=F 6@CI GFA G= F
JA F@C ? =G =?E GFA B@E F@C@ I F D@CJ A? =?E <@D
= =D I FA @ G= @D=C= @E F@ DC A? 1CA J F@ FA @ ;
I F@ @? C=? @ ? A F@ DC A? G= 1CA J F@ EG@ ?> FA @ I
=EAAC FCA >F F@ G= F EAAC G= A <@E @B@C ? >F =?E
?AIAE ?F=I @E F@ DC A? @ 1 I F@ DC A?@C AJ@ A1 GFAJ
G@C@ A = A?= DD @E G F I@E ? F@ EG@ ?> FA @ F@
DC A?@C F=B ?> I@@? A?B @E F@ = @ G= IJ @E A F@
A? E@C= A? A1 F@ Z E>@ GFA G@C@ A1 AD ? A? F= G= G F ?
F@ ; F@ EG@ ?> FA @ I@ ?> = D=C A1 F@ DC A? =?E F@
GFA @ DC A? I@ ?> F@ FA @ A1 F@ ACDAC= A? N Md
F@ DC A?@C G= ?E @E 1AC @ ?> 1C@ A F@ >=A A1 F@ *210 <"
I@C A1 =B@C ?> = @ AG@C F@ >=A G= @E = DC@ @? ? A? 92<=/
= = A < D FA @ =?E D@C A? =C@ ?@B@C E@ = ?@E F@C@ JAC@ F=?
=? >F A AC GA F@ <@@D@C A1 F@ >=A =DDA ? @E =?E D= E I
F@ Z @ A1 F@ D@= @ 4I F@ EA@ ?A C@ E@ = F@ >=A ?AC
F@C@ =? <@@D@CH C@ E@? @ = = F@E A ; I F@ F= F@
AE A1 F@ <@ =?E F@ F=C>@ A1 F@ DC A?@C F@ A C T
FA @ GF@C@ F@ I@C @ A? =C@ F@ E ?E@C F@ =J @ CAA1
I ?A A F@CG @ A?? @E G F F@ >=A GF F C@D= C@E I =
C= @ A? F@ ?F=I =? A1 GFAJ F@ >=A @C G= A?@ 5=C<@ F
F=E ?A EA I F= = AJJA?= G F@ GACE !FA @H G F C@1@CT
@? @ A F A1@? @ GA E J@=?= EG@ ?> FA @ ; =?E F@ EA I @E
GF@ F@C F >=A G= =FA @ = = 723
? F@ C = A1 =?= A?=>= ? =F ?EC@E ?E@C F@ @A H 3< * :)
. A C@ AB@C = 1= A? 1AC F@ J = A I C? ?>1 A1 =
FA @ A FA @ AC I=C? =DD@=C@E F= F@ I E ?>GF F F=E 4/ 3/ 2(12 P
=4(<14/ : +=+ :7/**)

Whd +#*2(S 1>=/ . /+19 IN G +=4 49/ * 3/ (4# + : 49/ 4/ 42 6<(49/ ; ?
1 G. = I .MGM //=// D 2& + 249/ (+=49/ 92<=/ 2& 0 +=9 4/ (+ :
49/ /7 14 . NMH 249/ (=36<=4 1/=2&49/ "/+1/ ? + : +(0/
Wd <: :S 1+=/ G GAA :2<34/ : 79/49/ (+ #12< 4 ; /4 49/
Wwb 2 + J+ S 1+=/ G *+10 /6 1+=/ +=9 /492<)9 49/ (/+ 4/ 4 ; <=4
YEG . /+19 YN G +=4 1 G. 3/ 4+0/ 42 9+J/ 3// 42 6<(49/ P
= A "MGM G 4+(0 !(; */+:? 9+3 4+ 4=+ : 49+4 49/ 92<=/ 7+= 49/
III "2==/== 2 2&49/)+2*/(0 79/
R8 /) , X 2(G 2V YA 49/ (49/)+2*/(7+= 24 ; /(/*# 49/ =/(P
/12< 4*+ : 49/ 92<=/ +=49/ 92<=/ 2& J+ 4 / 49/ (2& 49/ 6<=4 1/=2(49/ 9+3 P
49/)+2*/(+=49/ 92<=/ 2& 49/ 1+=/ 72<* : 9+J]3// (/=/(J/:
+ 249/ (+=49/ 92<=/ 2& 49/ 9+3 4+ 4=2&

92<=/' 3<4' '24 12 ; "*/4/ :' 2('9+3 4/ : ' +' :' '' 79 19' 49/' 27 ' /(' 9+:' : / "2= 4/ :' =4(+7' +' :' +) (1<*4<(+* ; "*/ ; / '4=' 7+=' '24' +' 92<=/' 2<4P 92<=/' 2(' 3+ ; ' 7 49 '' 49/' N' ! /2' . ' 1' GG' =' D

I @@?' I C? ' G= ' ?' =?' ?1 ? F@E' = @;' ' A? = ?@E' 1 B@' CAAJ '% B K% =' < F@?' =?E' D=C A C%' GA' CAAJ ' A?' F@' 1 C '1 AAC%' =?E' A?@' CAA J ' AB@C' F= ' 1 AAC;' ' F=E' =' A?@' = C = @% =?E' = ' F@' G ?EAG ' G@C@' 1]@E' ?' =?E' A?@' G= ' > =K@E';' F@' AG?@C' F=E' E@DA @E' C=G' =?E' =>C C= ' J D @ J @? ' ?' F@' I E ?> ' 'LG= ' AIZ@ @E% % F= ' F ' I E ?>' G= ' ?A ' =' FA @';' F= ' =' FA @' ? @?E@E' 1AC' =' EG@ ?> FA @% I ' ?A ' A J D @ @E% =?E' GF F' F=E' ?@B@C' I@@?' ?F=I @E% G= ' ?A ' =' FA @' G F ?' F@' J @=? ?>' A1' F@' = @% 1AC' ' J ' ?EA I @E ' I@' =' FA @4AC' E % F= ' ' G= ' ?A ' =' I=C?' ?' F@' ACE ?=C ' E @ % F= ' ' G= ' ?A ' =?' A FA @% I@A= @' ' G= ' ?A ' D=C @ ' A1' =' EG@ ?> FA @ ' E % F= ' ' G= ' ?A ' =' I=C?' ?' F@' AZF@C' F=?E' A FA @% ?' C@ D@ ' A1' GF F' I C> =C ' J >F ' I@' A J J @E';' I ' J @D = A?' A1' F@' @C J ' YG=' ?A ' ? @?E@E' ;A' I@' @E' =' =' I=C?% ?AC' G= ' ' A? C @E' 1AC' F= ' D CDA @' ?' F@' AZF@C' F=?E' ' G= ' =E J @E' F= ' ' G= ' ?A ' =' FA @' AC' A FA @' G F ?' F@' J @=? ?>' A1' F@' = @% 1AC' ' J ' ?EA I @E ' I@' =' FA @4AC' A FA @% ?' C@ D@ ' A1' GF F' I C> =C ' J >F ' I@' A J J @E';' I ' ' G= ' A? @?E@E' F= ' F@' @' A1' F@' I E ?>' 1AC' F@' D CDA @' A1' E@DA ?>' ?' ' F= ' =?E' C=G% GF F' ' F@' D CDA @' 1AC' GF F' =' I=C?' ' @E% J =E@' F ' =' I=C?' = @ %4 % ?' E@ B@C ?>' F@' Z E> J @?' A1' F@' A C% =1 @C' J @' =<@?' A' A? E@C% = E% ? F@' b @ A?!' ' GF@ F@C' F@' I E ?>' GF F' G= ' @ ' 1 C@' A' AJ@' G F ?' F@' E@ C D A?' A1' =' FA @% A FA @% AC' I=C? ' ' =DD@=C@E' A' F=B@' I@@?% I ' 1AC' F@' D CDA @' A1' I@ ?>' @E' = ' =' EG@ ?> ' FA @% I ' ' G= ' ?' =?' ?1 ? F@E' = @% =?E' ?@B@C' G= ' ?F=I @E ' ' G= ' A? @E@E' ?' =C> J @? % F= ' ' G= ' ?A ' =' FA @' G F ?' F@' J @=? ?>' A1' F@' ' @A ' % ' --' ' F= ' I @@?' E@ E@E' F= ' F= ' = @' EA@ ' ?A ' = @C' F@' ?= C@' A1' F@' C J @% AC' J =<@' =? ' ?@G' A11@? @% I ' J @C@ ' @] E@ ' F@' DC ? D= ' 1CA J' @C> ' J AC@' @=C ' F=?' F@' G= ' I@1AC@ ! F@C@' =??A ' I@' =? ' EA I ' F= ' F@' I E ?>% ?' F ' = @% G= ' ?A ' =' FA @% ?' C@ D@ ' A1' GF F' I C> =C ' AC' =C A?' A E' I@' A J J @E ' ' G= ' =' FA @' ? @?E@E' 1AC' C@ E@? @% I ' ' G= ' ?A ' ?F=I @E ' ' G= ' ?A % F@C@1AC@% =' EG@ ?> FA @% FA >F' ' G= ' ? @?E@E' A' I@' A?@' ' G= ' ?A ' =?' A FA @% I@ = @' ' G= ' ?A ' D=C @ ' A1' =' EG@ ?> FA @ ' 7 ' ' G= ' A? @?E@E' F= ' ' X&=' =' I=C?% I@ = @' ' F=E' I@@?' @E' 1AC' Fk @' D CDA @ ' 1AC' GF F' =' I=C?' ' @E ' F@' I E ?>' F=E' FC@@' AC @ % F J?@ % =' = C = @% =?E' G ?EAG ' F@' D = ? 11' F=E' E@DA @E' ?' ' =' b =? ' A1' C=G' =?E' =>C C= ' J D @ J @? ' ?' A? E@C= A?% G@' =C@' A1' AD ? AD' F= ' F ' I E ?>' G= ' ?A ' =' I=C?' G F ?' F@' J @=? ?>' A1' F= ' GACE' = ' ' ' @E' ?' F ' = @ ' ' G= ' =' FA @' =DD @E' A' FA @' D CDA @ ' A' GF F' =' I=C?' J >F ' I@' =DD @E ' F@' ' @A ' % ' !--% FA >F' C@ J @E = ' ?' AJ@' C@ D@ % ' ?' A F@C ' =D = ' D@?= ' F@' F ?EC@E' =C@' =I @' A' J =<@' = 1= A?' A' F@' D=C ' ?Z C@E' I ' F@' I C? ?>' A1' =' FA @% A FA @% AC' I=C?% DCAB E@E' =' =D = ' A11@? @' I@' A J J @E' =>= ? ' F= ' = @' I ' F' I C? ?> ' F@' = @% F@C@1AC@% G F' C@1@C@? @' A' =' = @' <@' F@' DC@ @? % J ' I@' A? C @E' C ;' =?E% A' A? C ?>' % G@' =C@' A1' AD ? A?' F= ' F@' I E ?>' A? J @E' I '1 C@' ?' F ' = @' G= ' ?A ' =' IA @% A FA @% AC' I=C?' G F ?' F@' J @=? ?>' A1' F ' ' A1' 5 =C = J @? ;' =?E' ?' F ' AD ? A?' ACE' @? @CE@?% G F' GFAJ' G@' F=B@' A?1@CC@E' DA?' F ' = @% A? C H 1<3

'3< *: ')' ' B' A ?' F=C>@E' F@' DC A?@C' G F' @ ?>' 1 C@' A' F@' EG@ ?>

":B' *= : 2(/' &' ' 9/' <' : (/ :' 2& 4' '1+=/' * 0/' 49 =' 72<*:' &+** 7 49 '' =/1' Y (+J/*=' E' ' IY. ' //' +*=2' */=' (' 2& 49/' ' / 7' 14' :' ' NMG 9/' <' : (/ :' 2& 9(/ 7=3<(#' H' +=4' I A W

FA @' A1' & = A?' =?E C?I ' F@' FA @' G= ' A?@' A1' =' ? J I@C' 4/ ' : / :' &2(' G F' F@' DC A?@C' F=E' J AC >=>@E' A' & = A?' =?E' C?I %' =?E' 9+3 4+4 2 '' rFAC Ed@1AC@' F@' C@' =' D=C ' F=E' =<@?' DA @ A?' @ 1' F@ J ' A?' I@ ' :2/=' '24' F= , A1' F@' J AC >=>@@ %' =?E' F@ ' F=E' DC@B A ' C@ @ B@E' F@' C@? ' 3/12 ; f' X' #*' 4& ' A1' F ' ' ; I ' F@' FA @' ?' b @ A?' G= ' ? ?F=I @E%' =?E' : 7/** ') ' @ C@E%I ' =' D=E A < ' * = @%' %' ! ' F ?<' F ' ' ?A ' F@' EG@ ?> ' 92<=f' 4 **' FA} u' A1' F@ @' J AC >=>@@ %' A' = ' A' @?=I @' I C> =C ' A' I@' AJT =2 ; f' "/(=2 '' J @E' ; I ' ' ' = E' F= ' F@' = @>= A?' ' ?A ' A' I@' ?E@C AAE' : 7/**=' '' 4 = ' J @=? ?>' F@' EG@ ?> FL @' ?' GF F' F@ @' D@C@A? ' EG@ %' I ' = ' J @=? ?>' F= ' ' ' =' EG@ ?> FA @%' =?E4 F= ' ' I@ A?> ' A' F@ J ' ' DDA @' =' J =?' B@ ' ?' " A ' %' =?E' ' @ @E' ?' 1@@' A1' " A ' -%' %' :%' , %' ANZ E' -%' %' :%' , %' I@' DCAD@C ' E@ C I@E' = ' F@' EG@ ?> ' FA @ ' A1' F@E=?E ACE' V ' AJ@ ' @? C@ ' A' F@' b @ A?' GF@ F@C' Fu' @C J ' EG@ ?> FA @' J @=? ' F@' FA @' ?' GF F' =' D@C A?' EG@ %' EC' A? ' J DAC ' =' C@ = A?' I ?>' I@ G@@?' F@' D@C A?' =?E' F@' F ?>' * ' AD ? A?' %' F= ' GF@?' A ' = @' ' A' I@' F@' EG@ T ?> FA @' A1' ' ,' %' F= ' ' =' D = @' ?' GF F' F@ ' =C@' ?' AJ@' @? @' EG@ ?>' ' FA '@%' = ' AA?' = ' I ' =?E' 1 @E' 1AC' C@ E@? @%' EA@ ' ?A ' I@ AJ@' =' EG@ ?> FA @' ' AJ@' D@C A?' EGJ ' ?' ' @C@' F@' @B E@? @' ' F= ' ?A' D@C A?' F= ' EG@ ' ?' %' =?E' F@C@' ' F@C@1AC@' ?A' @B E@? @' A' DDAC ' F@' A J H 1!3

?@' A ?' F=C>@E' F@' DC A?@C' G F' @ ?>' 1 C@' A' F@' EG@ ?> ' ' 4/ ; "2(+(#' FA @' A1' ' & F FAC?@' ; =?A F@C' F@' FA @' A1' ' & F FAC?@' ; =?E' +3=/ '1/' &(2 ; ' =' F CE' F@' EG@ ?> FA @' A1' ' = ' = ' F=E' C@ E@E' ?' =' A =>@' +' : 7/** ') ' A' F@' F' A17 ?@' = ' @?=? ' A' & F FAC?@%' = ' =' C@? ' D= E' b =CT 92<=f' 79 *=4' 4' @C ' ?' ACE@C! F= ' AJ@' ?@ @ =C ' C@D= C ' J >F ' I@' EA?@' A' F@' =' <' : /(' (/P A =>@' I ' F@' =?E ACE ' = ' @1 ' F@' A =>@' A?' F@' F' A1' ?@%' "+ (=?E' C@ J AB@E' F ' 1 C? C@%' =?E' F=E' ?A ' C@ C?@E' = ' F@' J @' A1' F@' C = %' F@' C@D= C ' ?A ' F=B ?>' I@@? A J D @ @E ' & F FAC?@' = @E' F= ' F@' F@ E' = ' C@ DA? I @' 1AC' F@' C@? ' E CC ?>' F ' D@C AE ' ' G= ' AIZ@ @E' F= ' F@' GA' 1 C ' A ? ' G@C@' ?A ' DCAB@E%' = ' F@' FA @' G= ' @ ' A' = ' ; =?E' A' CA J D1A?%' %' F@ E ' ' G= ' F@?' AIT Z@ @E' F= ' F@' A =>@' G= ' ?A ' F@' EG@ ?> FA @' A1' = ' = ' F@' J @' A1' F@' 1 C@%R= ' F@' G= ' ?@ F@C' C@ E ?>' ?%' ?AC' ?' DA @ A?' A1%' '6 =?E' F= ' 1' FA @' H ?' F@' = @' J @=? ' =' EG@ ?> FA @ ' CA J D A?%' %' G= ' A1' AD ? A?' F= ' =' FA @' ?' F@' = @' J @=? ' =' EG@ ?> FA @' ; I ' ?' F ' = @' F@' FA >F ' F@' @B E@? @' DCAB@E' ' A' I@' F@' EG@ ?> FA @' A1' = %' =?E' F@C@1AC@' F@' F CE' A ? ' G= ' DDAC @E ' 1D3

DA?' =?' ?E J @?' 1AC' @ ?>' 1 C@' A' =' FA @' ' =DD@=C@E' F= ' ' 3< * : ') ' F@' DCA @ AC%' F C @@?' @=C ' =>A%' = @E' =' J = ' I E ?>' A' I@' /(/14/ :' &2(' @C@ @E' = ' F ' J@' GAC< ' 1AC' I ' GAC<D@AD @' = ' F@' < ?' A' @ ' 72(0 ; / '' 42' F@ C' J @= ' ?' =?E' EC ' F@ C' A F@ ' F ' I E ?>' G= ' @B@?' 1@@ ' /+4' 49/ (' ; /+*=' F >F%' =?E' F=E' 1A C' G= ' A1' A?@ ' G FA ' J AC =C%' F@' CAA1' A? T ' ' 3<4' ' /J/(' ?>' A1' ICAA J%' C1%' =?E' C=G%' =?E' I@ ?>' DDAC @E' I ' GA' D @ @ ' '4/ ' : / :' 42' 3f' A1' J I@C' ; F@' EAAC' F=E' ?@ F@C' A <' %?AC' IA %' =?E' F@C@' G= ' ?A' +' : 7/** ') ' G ?EAG' ?' F@' I E ?>' $ GF F' F=E' ?A ' I@@?' @C@ @E' = ' =' F=I =T 92<=/ ' =' ' 24' +' A?%' =?E' ?A?@' A1' F@' DCA @ ACH ' J @?' F=E' @B@C' @D ' F@C@ ' ?@ 49/' =4+4<4/ ' =2 '' ; +# 9+J/ 492<)9' +' "/(P

" B' /) ' ' ** =2 ' ' ; 2V' ' ') 3<4' 49/' 6<(# +1T< 44/ : ' ' '=< ; ; ') '<" ' "*B' /) ' ; 3(/ #' Y 2V' ' M ' IYI ' (2 ; "42 ' ' ' */&4' 4' 42' 49/' 6<(# 42' =+# (2 ; "42 ' ' ' 2(: /(/ :' 49/' =/12 ' :' 12< ' 4 79/49/(' +4' 49/' 4 ; /' 2&' 49/' &(/' +**S=' +3P 42' 3f' + ; / ' : / :' 9#' '=/(4 ') ' +**S=' ' + ; /' =/ '1/' 7+=' ; /(/*# 4/ ; "2(+(# ' 9/' 9+J ') ' &/(' 9 492 ; / ' + ' :'=+ :' 9/' 72<*:' (/=/(J/' +4' 49/' 4 ; /' 9/' */&4' + ' ' 4/ ' 4 2 '' 42' (/P 49/' "2 ' 4' 79/49/(' 49/(/' 7+=' + '# /J : / ' 1/' 4<(' 42' =<" "2(4' 49/' =/12 ' :' 2(49 (:' 12< ' 4=' 6

=*/"4 =2 ; f 4 ; f '' 4 7 49 49/' 0 '27*/ :) /' 2& 49/' 27 '/(

& =J ' F=E' I@@?' @@D ?>' ?' F@' I E ?>' G FA ' F@' DCA @ T ACH ' A? @? %! I ' F@' G= ' =G=C@' A1' F ' F=B ?>' EA?@' A' 1AC' FC@@' & @@< ' DC@B A ' A' F@' 1 C@% F@' GAC< ?>' A?' F@' CA=E % =?E' F=B ?>' ?A' A =>@' A1' F ' AG?' F@' I E ?>' G= ' = @E' =' F@E% =?' A FA @% =?E' =I ?% =?E' G= ' @C@ @E' 1AC' F@' @!A1' F@' J @' CGA ' ?E= % % % 7 F ' D = @% ?A ' F=B ?>' I@@?' I ' 1AC' F@' F=I = A?' A1' J=?% =?E' F@' D@C A?' GFA' @D ' F@C@' EA ?>' A' G FA ' F@' @=B@' A1' F@' AG?@C% ' F ?<' F= ' 'G= ' ?A ' =' FA @' G F ?' F@' = @;' = FA >F' =' A =>@% FAG@B@C' J @=?' =?E' GC@ F@E% @E' = ' F@' F=I = A?' A1' J =?% GA E' I@' DCA @ @E' I ' ' @?= J @? H 1 3

/**+(' <' : /(' +' 1244+) /' =/"+P (+4/*# 211<P " / :

F@' 1 C ' A ? ' A1' =?' ?E J @? ' 1AC' =C A?% 1AC' @ ?>' 1 C@' A' =' @ =C% E@ C I@E' ' = ' F@' EG@ ?> FA @' A1' =' A? ' @;' F@' @ A?E' A ? ' E@ C I@E' ' = ' =?' A FA @' D=C @ ' A1' =' A =>@' ' =DD@=C@E' F= ' ?E@C' =' A =>@' G= ' =' @ =C% GF F' @ =C' G= ' F 'E' I ' F@' A? =I @' A1' C=E1ACE' = ' =' A < D FA @' F@' @ =C' =?E' A =>@' G@C@' ?E@D@?E@? ' A1' @= F' A F@C' ?' = ' C@ D@ ' F@' @ =C' G= ']' AC' @B@?' 1@@ ' I@ AG' F@' C1= @' A1' F@' >CA ?E ' A <% % G= ' A1' AD ? A?' F= ' ' G= ' ?@ F@C' =' FA '' ?AC' =?' A FA @% =?E' F@C@1AC@' J DCAD@C ' E@ C I@E' ?' IA F' A ? ' N d

2' =4+4<42(# "(2J = 2 '' +=' 42' 3< * : ') =' 7 49 '' 49/' 1<(4 *+) /

F@' . ' , ' ' @A ' : % ' - % ' % =?E' - :' , ' -8 3 @ ' ' % ' 8 % A? ' E@ @C J ?@E' GF= ' F= ' I@' A? E@C@E' =' EG@ ?> FA @' 1AC' F@' D CDA @' A1' I C> =C % FA @ IC@=< ?>% =?E' @= ?>' ?' =' EG@ ?> ' FA @' ;' =?E' F@C@' ' ?A' = AC ' DCAB A?' = ' A' GF=' F= ' I@' A?T E@C@E' =' FA @' ?' F@' = @' A1' =C A?% NJ d

=' 42' + '' 0 2<4P 92<=/ $ 7 49 '' 49/' (/"/+*/ :' =4+4<4/ '$' hx/2' . ' 1' GG

?' =' = @' GF@C@' F@' DC A?@C' G= ' ?E @E' ?E@C' F@' C@D@= @E' = @% ' @A ' % ' --% 1AC' @ ?>' 1 C@' A' =' 7 " 6! ' 4> <4> P =' DA ? ' G= ' J =E@' GF@ F@C' F@' I E ?>' ?' b @ A?' =? G@C@E' F ' E@ C D A? ' F@' DCA @ AC' <@D ' =' D I FA @% =?E' = A' =CC @E' A?' F@' I ?@ ' A1' =' 1 =] EC@ @C' ;' =?E' F@' I E ?>' @' 1 C@' A' I ' F@' DC A?@C' A? @E' A1' =' =I @' =?E' =' F=J I@C' AB@C' % GF F' G=' @E' I ' F@' DCA @ AC' = ' =' FAD' 1AC' <@@D ?>' =?E' EC@ ?>' F ' 1 =]' ;' =?E' F@ @' I E ?> ' G@1@' = @E' ?' =' =CE' = ' F@' I= <' A1' F@' FA @% =I A ' 1A C' AC' 1 B@' =CE ' E =? ' 1 AJ' % F@' =CE' I@ ?>' ? A @E' A?' = E@ % ?' A?@' D= E' I ' F@' FA @% ?' =?A F@C' D=C ' I ' =' G= % ?' =' F CE' I ' =' C= ?>' GF F' @D=C= @E' ' 1CA J ' =' 1 @ E% =?E' ?' F@' C@ J = ? ?>' D=C ' I ' =' F@E>@' ' G= ' AIZ@ @E' A?' I@F= 1' A1' F@' DC A?@C' F= ' F ' I E ?>' G= ' ?A ' = ' 4> <4> ' G F ?' F@' = @' ?E' F= ' F@' = @' =DD @E' A? ' A' A FA @ ' GF F' ?' A? @ J D = A?' A1' =G' G@C@' ?A ' D=C ' A1' F@' EG@ ?> FA @;' =?E' ' G= ' ? @E' F= ' F ' G= ' D=C ' A1' F@' EG@ ?> FA @% =?E' F= ' F@' ?E J @? ' FA E' F=B@' I@@?' 1AC' =C A?' = ' AJ JA?' =G ' % DA?' =' = @' C@ @CB@E% F@' Z E>@ ' =>C@@E' F= ' F@' B@CE ' G= ' C >F ' ?E' ' G= ' AI @CB@E% F= ' FA >F' 1AC' AJ@' D CDA @ ' F ' J >F ' I@' D=C ' A1' F@' EG@ ?> FA @% @ ' ' ' G= ' ?' 1= ' =?' A FA @% N?d

' =1922* ?' =' I @b @?' = @' F@' DC A?@C' G= ' A?B @E' DA?' =?' ?E @

"# /) ' ' ')*+' : ' ' ' ' AHH' 9/' */+(' / :' ' ' 492<) 94' 49/' 7 + ' 4' 2& +' 7 ' :27' ' ' =+ :' 9/' ' ' 3 ' N ' ' ' N N ' ' 49/ ; ' /V' ' ' .' C ' (.' 6 ' GAY' ' ' 7+=' 1 4/ :' ' 49/' 1(27 'K ' 9 :+*' ' ' =+ : ' 049/ (/' 49/' "/(=2 '' (/ '4/ :' 4' +=' +' 92<=/ S "7B' J 5 .' C /7 ' E " B' // 0 2 '+*: S=' .' G' /7 ' IY

"/(' *: /(=2 ' ' WXb' 2(49S' 1+=/ ' G' +=4' ' ' 1 'G. ' =' A ' "' .MG. ' '' 49/' : =1<== 2 '' 3/&2(/ 49/' 6<:) /=' H '=4' YD' 7+=' (/&/(((/ :' 42' 79/(/' 4' 7+=' *+ .' :27 '' 49+4' 42' 3<(' ' + =4+3*/' +' :' 49/' * 0/' "+(1/* 2& 49/' ; +' = 2 ' ' 92<=/' =' &/*2 ' # ? 3<4' 4966' '' 49/' ' : 14P ; / '4' 4' =' =<&& 1 / '4' 42' 5' .' Ja ' + 3+ ' ' ; +*4 92<=/ ' 2(' 49/' * 0/ ' 7 492<4' =+# ')' ' J .' " ' NMM

J@? A? ?>A @B@C= A ? AJ@A GF F F=C>@E F J G F I C? ?>7= @C = ?A FA @H A? @ FAJ= (A>@C ;= =?E A F@C 3/7/**:/P G F I C? ?>7= @C = ?<4> P A F@ = E (A>@C ;= =?E AJ@A F@'' A ? G@C@ = AJJA?= =G A F@C I@ ?> = E =>= ? F@ 1ACJA F@ ! @ F@ DC@J @ I C? A? @E A= FAA T CAAJ GF F &= = @E B@C ?@=C A F@FA @ ?GF F (A>@C B@E I@ ?> @D=C= @E 1CAJ A? I =?=CCAG D= =>@= IA = =CE G E@ F@ CAA1 A1 F@ FA @ GF F G= A1 @ C@= F@E AB@C D=C A1 4 F@ CAA1 A1 F@ FAA GF F G= F= F@E G F C=G;= =?E F@ FAA G F= >=CE@?= =?E F@C DC@J @ A>@ F@C G F = A C GF F CCA ?E@E F@ GFA @ G@C@ C@? @E I (A>@C A1 F@ D=C F= F H@=C C@? F@C@ G= = A? ? @E 1@? @ CA ?E = F@ ;'C@J @ =?E ?AIAE I (A>@C =?E F 1=J F=E = C ZF A AJ@ G F ? ! G= AIZ@ @E F= F@ I E ?> I C? G= ?A = FA @ ?AC =?A FA @ G F ?F@ @A -- A? = = @ C@ @CB@E F@ Z E>@ G@C@ A1 AD ? A?= F= F@ I E ?> G= ACC@ E@ C I@E ?F@ ?E J@? @ F@C = =?A FA @ AC D=C A1 'F@ EG@ ?> FA @ G F ?F@ J@=? ?> A1 F= = @ N d

?? ?E J@? DA? F@ . , @A : DC A?@C ?A?@ A ? G F @ ?>1 C@ A =?A FA @A1 & (@=? ?A=?A F@C G F @ ?>1 C@ A = A= F FA @ =?E ?=?A F@C G F @ ?>1 C@ A = I E ?> =?E @C@ A? F@? @E I & #@=? =CC ?> A? F@ C=E@ A1 = DA @C@C F@ DCA @ AC G= = =CC@ =?E <@D FC@@ AG F@ I E ?> ?b @ A? G= ? F@ DCA @@ ACH 1=C J = E =?E G= FC@@ AC 1A C DA @ 1!AJ F@ DCAT @ ACH EG@ ?> FA @ =?E J >F I@ @@?1CAJ F@ DCA @ AC @E A <@@D= =C ?GF F F@ @E ?F I ?@ A1 DA @C@C =?E = A A <@@D F AG! ?= ?>F F@C@ GJ = I=C?=EZA ? ?> F@ EG@ ?> FA @ F@?= >= @G= =?E F@?=?A F@C C=?>@ D1 I E ?> GF F N E ?A =EZA ?F@ EG@ ?> FA @ AC I=C?;F@1C GF F1CAJ F@ EG@ ?> FA @ G= =D > =?E =EZA ? ?> F= G= =?A F@C D > =?E =EZA ? ?> F= G= =?E C<@ FA @ =?E =EZA ? ?> F@ C<@ FA @ G= F@ I E ?> ?b @ A? F@ EG@ ?> FA @ =?E I=C?1ACJ@E A?@ E@ A1 F@ 1=CJ =CE =?E F@ FC@@ A F@C E@ G@C@ 1ACJ@E I =1@? @ ? A ?> F@ @ I E ?> F@ I E ?> G= 1ACJ@E I] DC >F DA ?@=C @B@?1@@ F >F ` FC@@ ? F@ 1CA? =?E FC@@ = F@ I= < ` A?@ DA I@ ?> = @= F AC?@C =?E F@ A F@C GA ? F@ J EE @ A1 F@ 1CA? =?E I= < F@ @ DA DDAC ?> F@ CAA1; F@C@ G@C@ D @ @ A1 GAAE = E 1CAJ A?@ E@ A F@ A F@C C=G G= D DA? F@ @ D @ @ A1 GJAE = E G E@ = F@ IA AJ =?E EC=G? D A = C E>@ = F@ AD; F@ C=G G= D= <@E D = A @ = A E I@ D= <@E; F@ D @ @ A1 GAAE =?E C=G J=E@ F@ CAA1 C@ 1CA? A1 F@ I E ?> A F@ 1=CJ =CE G= @? C@ AD@? I@ G@@?F@ DA ; A?@ E@ A1 F@ I E ?> =ET ZA ?@E F@ C<@ FA @ GF F AB@C@E F= E@ = F@ G= D A 1F@ CAA1 =?E F= E@ G= ?= @E A F@ C<@ FA @ F@ I= < =EZA ?@E = 1 @ E =?E G= = C= 1@? @ F@ C= I@ ?>] ? F@ G E@; F@ @ =J@ 1A C AC 1B@ 1@@ 1CAJ F@ >CA ?E G F ? GA 1@@ A1 F@ CAA1 =?E F I= < 1ACJ@E D=C A1 F@ 1@? @ I@1AC@

(22 ;92*:/''42 3/7/**:/P =1(3/:/49/(+=+''2'4 9244=/2("+(4 2C49/:7/**P ') 92<=/

''2"/''=9/: ''+&+(;P #+(:12;P "2=/:2&<"P ( )94"2=4= =<""2(4 ')" /1/=2& 722:'*+ :' +1(2==49/;' +':12J/(/:' 7 49=4 +7'+= +(22&' =+''2<492<=/' /44 ')'&(/42 49/=4(+7'2'' 49/(22&'9/*:' +=/44 ')'&(/ 42'49/2<4P 92<=/7 49 '' 49/D ' ! /2' I'1' HM' =' G

J @? A?@E ' F@' E@' ADDA @' F@' C<@ F@E' =EZA ?@E' F@' CA= %
=?E' G= ' =' D= @' 1@? @% I ' ?A ' b @' D' A' F@' AD ' ' ?@' A1' F '
G ?@ @ ' 1AC' F@' DCA @ A?% =' A? E@C=I @' 1=C J @C% = E' F= ' F@'
FA E' = ' F@' I E ?>' ?' b @ A?' =?' A FA @ ' F@' A? 'Z{ '
I C? 'G= ' AJ @' A1' F@' C=G' A?' F@' C A1' DA?' =' E'= @ C@ @CB@E'
DA?' F@' b @ A? % 1 C % GF@ F@C' F@' I E ?>' G@C@' =?' A FA @'
G F ?' F@' J @=? ?>' A1' F@' .' ,' 9' @A ' :% ' % ' -' 1AC' F@C@' G= '
?A' >CA ?E' 1AC' = ?>' F= ' ' A E' I@' = @E' =' A= F FA @% AC' =
I E ?>' =?E' @C@ A?' @E' ?' =CC ?>' A?' F@' C=1 @' A1' =' DA T
@C@Cz' ;' =?E' @ A?E% GF@ F@C% ?' = @' F@' I E ?>' G@C@' =?' A T
FA @% F@' C=G' N= ' =IAB@' E@ C I@Ed' G@C@' =' D=C ' A1' F@' I E ?>;'
= ' F@' Z E>@ % @] @D ' ?E= % ' % FA >F ' F@' uC@ A?' =?' A T
FA @% =?E' F= ' F@' A?B A?' G= ' C >F ' N Dd

' " "4# DA?' =?' ?E J @? ' 1AC' @ ?>' 1 C@' A' =?' A FA @% ' =DD@=C@E'
7 49 '' 49/' F= ' F@' I E ?>' @ ' 1 C@' A' G= ' =' D > % F= F@E' = ' F@' AD% G F'
1h' *+)/' =' IA=CE@E' E@ % F=B ?>' FC@@' EAAC ' AD@? ?>' ? A' =' =CE' ?' F@'
+ '' 2<492<=/ DA @ A?' A1' F@' DCA @ AC' ;' F@' I= <' A1' F@' D > ' 1AC J @E' D=C ' A1'
F@' 1@? @' I@ G@@?' F@' DCA @ ACH ' =?E' ZZ@' =EZA ? ?>' DCAD@C '
F@' = @' A1' F@' DC@J @ ' G= ' F '$ 1 C % F@' DCA @ ACH ' FA @'
1CA? ?>' F@' D I ' CA=E% G F' =' I= <' EAAC' AD@? ?>' ? A' F@' =CE' ;'
F@?' =' >= @' @=E ?>' 1CA J ' F@' CA=E' ? A' F@' =CE' ;' F@?' ' D= @E'
1@? @' = I A ' GA' 1@@ ;' F@?' =' A =>@;' F@?' =' I=C?' = = F@E' A! ;'
F@' A =>@' =?E' I=C?' G@C@' @ ' I ' F@' DCA @ AC' A' =' @?=? ' ;' F@ '
AD@?@E' A' F@' CA=E% =?E' ?@ F@C' A1' F@ J ' F=E' =? ' EAAC' AC' AD@? ?>'
? A' F@' =CE' ;' ?@] ' A' F@' A =>@' =?E' I=C?' G= ' = =I @' ;' F@?' =
I=C?;' F@?' F@' D > ` = ' ?' F@' DA @ A?' A1' F@' DCA @ AC%
=?E' AD@? ?>' ? A' F@' =CE' ;' ?@] ' A' F@' D > ' G= ' =' D= @E' 1@? @%
=?E' F@?' =' B@' F@E>@' CA ?E' A' F@' FA @% ?' GF F' F@E>@' G@C@
FC@@' >= @ ' AD@? ?>' ? A' =?' AC F=CE' =?E' GA' 1 @ E ';' =?E% DA?' =
= @' C@ @CB@E% F@' Z E>@ ' G@C@' ?=? J A ' A1' AD ? A?' F= ' F@'
D > ' G= ' =?' A FA @' G F ?' F@' ' 3 @ % ' 9 % ' ' N>d

44' 2"/ '' F@' ?E J @? ' ?E@C' Ip4 .' ,' 9' @A ' :% ' % ' -% F=C>@E' F@'
3< *: ')' '' +' DC A?@C ' G F' @ ?>' 1 C@' A' =?' A FA R ' F@' D = @' ?' b @ A?'
& /* : ' +4' +' AAE' ?' =?' ? A @E' 1 @ E% =' 1 C A?>' 1CA J ' F@' EGbZ ?> FA @% =?E'
: =4+ ' 1/' &(2 ;' ?A ' ?' >F ' F@C@A1 ' F@' DDA @E' D = @' F=E' AC > ?= ' I@@?'
+ ' :' 2<4' 2& E B E@E' ? A' = ' =D=I @' A1' FA E ?>' @ >F ' I@= % =?E' D=C ' AD@?'
=) 94' 2& 49/' =?E' D=C ' F= F@E' ;' I ' A1' = @' @=C ' ' G= ' I A=CE@E' = ' CA ?E%
27 ' /(' = 92<=/ F@' = ' =<@?' =G= % =?E' =?' AD@? ?>' @1 ' 1AC' FAC @ ' =?E' AG % AC'
' 492<) 9' A F@C' = @' GF F' J >F ' I@' ?' F@' 1 @ E% A' >A' ?' =?E' A ' A1' F@ C'
32+(: / :' AG?' = A !E' ;' F@C@' G@C@' ?A' G ?EAG ' ?AC' EAAC% =?E' F@' AD@? ?>'
(2<' :' +' :' G= '] @@?' 1@@ ' G E@% A' F= ' @B@?' =' G=>>A?' J >F ' I@' EC=G?'
12(/ (/ :' ' ' 7+' 24' + '' F A >F' ' ?E@C' AB@C ' F@' I= <' D=C ' A1' F@' CAA1' G= ' DDAC @E'
<492<=/' I ' DA % A' GF F' F@' E@' IA=CE ' G@C@' ?= @E' $ D=C ' A1' ' ? @C?= '
, (49 '' 49/' G= ' IA=CE@E' =?E' A <@E' D% GF@C@' @B@C= ' IA=CE ' G@C@' A <@E' D' ;'
D' ' E' /2' I' F@C@' G= ' ?A' E ? A?' ?' F@' CAA1' I@ G@@?' F@' ? A @E' =?E'
1' M_' = ' G ? ? A @E' D=C % =?E' F@' ?F=I =? ' =?E' AG?@C ' = ' = @E' '
F@' AG = ' ;' =?E% DA?' =' = @' C@ @CB@E% = ' F@' Z E>@ ' N@] @D '
ACE' ?EF C % ' % =?E' = ? A?% d% J @ ' =?E' A? E@C@E'
F ' = @% =?E' ACE' @? @CE@?% ' % = @ % % @E= @% %
3 = >F=?% % =?E' 5=C<@% % =?E' A =?E% % F@ E' F ' A' I@' =?

1E3' I 8' .' 2 ' G' ,' / ' ' ' I ' 0 1' I ' ,' > ' ' ' 9L' I ' - '
' : ' ' "# ' ' " ';% ' ' # ' 2' - ' ' ' ,' + ' - ' ' I ' ' .
' 6 ' ' 5

/ ' , ' = - ' ' 6 '

A FA @' G F ?' F@' = @ ' F@' A F@C' @B@?' Z E>@ ' G@C ' A1' =' A? C=C ' AD ? A?% =?E' =' D=CEA?' G= ' C@ A?= J @?E@E ' 1"3

F@' DC A?@C' G= ' F=C>@E' ?' A?@' A ? ' G F' @ ?>' 1 C@' A' =?' A L @% =?E' ?' =?A F@C' BB Z;' @ ?>' 1 C@' A' =' =I @;' F@' D = @' I C? ' <6#' I @1' =?' AB@?' A' I =<@' IC < % =?E' F@' DCA @ AC' F=E' J=E@' =' EAACG= ' NG F' =' EAACd' ? A' % =?E' F=E' D ' IA=CE ' =?E' C1' AB@C' F@' B@? FA @' = ' F@' AD ' GA' DA @ ' F=E' I@@?' 1]@E' = CA ' ' = ' =F@ ' F= 1' ' F@ >F % A?' GF F' IA=CE ' F=E' I@@?' = E' A' = ' A' J =<@' =' A1 ' 1 AAC% ? ' F ' D = @% F@' DCA @ AC' <@D ' =' AG;' =?E' =EZA ? ?>' A' % I ' ?A ' ?E@C' F@' = J @' CAA1% G= ' =' @=? A% ?' GF F%=' D@C A?' ?= J @E' AD@' <@D ' =' FAC @;' I ' F ' = @C' I EE ?>' G= ' ?A ' ?Z C@E' I ' F@' 1 C@' F@' I E ?>' G= ' =IA ' =' F ?EC@E' =CE ' 1CA J ' =? ' EG@ ?> FA @% =?E' F@' AG?@C' A1' F@4?@=C@ ' EG@ ?> FA @' F=E' ?A' ? @C@ ' ?' % =?E' ?A' EG@ ?> ' FA @' AC' 1=C J =CE' A1' F@' DCA @ AC' G= ' ?@=C' % =?E' F@C@' G= ' ?A' G= ' A' A??@ ' ' G F' =? ' EG@ ?> FA @' ' G= ' A? @?E@E' 1AC' F@' DC A?@C% F= ' F ' I E ?>' G= ' ?@ F@C' =' =I @' ?AC' =?' A FA @' F@' @C J ' ' FA @' F=E% IA F' = ' A J J A?' =G' =?E' ?E@C' F@' C@D@= @E' = @ % I@@?' F@ E' A' =DD ' A' FA @' I E ?> ' A? ' GF F' G@C@' G F ?' F@' C =>@% =?E' ?' G'F F% ' F@' .' , ' 9' @A' :% ' - % =' I C> =C ' J >F ' I@' A J J @E% =?E' F@'C @' I@ ?>' F= ' GF@C@' =? ' @C J ' GF F' F= ' A I = ?@E' =' DC@ @' =?E' E@1 ? @' J %@=? ?>' = ' A J J A?' =G% AC' ?' =' = @% ' @E' ?' =' = @% ' G ' I@' DC@T J@E' A' F=B@' F@' =J @' J @=? ?>' F@C@' ;1 3' ' J ' I@' =<@?' F= ' F@' GACE' A FA @' G= ' @E' ?' F@' .' , ' 9' @A' :% ' % ?' F@' =J @' @? @' = ' ' F=E' = ' A J J A?' =G' =?E' ?E@C' F@' 1AC J @C' =T @ ';' =?E' ? @ ' F' =' A? C A?' G@C@' D ' DA?' F= ' &ACE% F@' GACE ' 7 ' =I @% A= F FA @%H , % G@C@' @ @ ' =?? A % % 7 ' = J ' @=C ' NZ1' AD ? A?' F= ' F ' ' ?A ' =' = @' G F ?' F@' ' A1' 5=C = J @? ' ' ' C @% F= ' F@' GACE' n A FA @' n' A C ' ?' F@' ' A1' 5=C = J @? % I ' ' =DDC@F@?E' J ' ' F= ' I@@?' @ @E' 1CA J ' =? @?' J @ ' F= ' =?' A FA @' J ' I@' F= ' GF F' I@ A?> ' A' =' EG@ ?> FA @% =?E' ' ?' A J @' C@ D@ ' D=C @ ' A1' F' EG@ ?> ' FA @' F ' I E ?>' ' ?A ' D=C @ ' A1' =? ' EG@ ?> FA @% =?E' EA@ ' ?A ' =DD@=C% A' I@' A??@ @E' ?' =? ' G= % @ F@C' G F' F@' DC@T J @ ' A1' * C' D=CCAG% AC' A1' F@' DCA @ AC' ' F=E' I@@?' =' IC <T < ?% =?E' F@' DCA @ AC' <@D ' F ' AG' F@C@' =1 @CG=CE ' F@C@' ' ?A' F' GACE' = ' AG FA @' ?' F@' = @ ' F@' A? ' GACE' <@ ' A' I@' =DD =I @' ?' F ' = @' ' F@' GACE' A FA @' ;' =?E' F ' I E ?>' I@ ?>' GFA ' ? A??@ @E' G F' F@' EG@ ?> I@ @% ' ' ?A ' ? E@E' ?' F@' @>=' E@1 ? A?' A1' A FA @ ' ' ' = A' ?A ' ZP% =I @' ;' ?E@@E% ' EA' ?A ' @@' F= ' ' A E' I@' J F' J AC@' DCAD@C ' = @E' =' =I @' F=?' ' A E' I@' = @E' =' A= F FA @ H 1 3

'' 2744 2<=/' ; <=4' 3/' '' &1< *: ')' 79 19' 3/*2 ')=' 42' +' : 7 /** ') ' 92<=/ ' +' :' =' '' =2 ; /' (/P ="/14=' " < 1/* 2& 49/' : 7 /**P ') 92<=/

W(d' !' , ' ** =2 ' ' ' ' ' ' ' HHY

W=d' +1' 3(' 4+4<4/' W ' Ib' 22(/' , ' <==/#' 23 ' ND' ; 49' &' +(; 2 ' ' ' 2: ' . IG

"d' /V' ' +<)942 ' ' A' ' ' ' AAA' +(19' .A' . EHH' 9 =1+=/' =' / ' 4 4*/ : ' 42' 49/' ; 2(/' 7 /)94' 49/' 2" ' 2 '' 2& 49/' */+(' / : ' 6< :)/' 7+=' '24' &2(; / :' 7 49' (/P &/(/ ' 1/' 42' 49 =' 1+=/' +*2 ' / ' 3<4' 49/' =+ ; /' W6 ' /=4 2 '' 9+ : ' 3/&2(/ [3/1 '' (+ =/ : ' + ' :' : =P 1<==/ : ' 3/&2(/' 9 ; ' '' /V (' ** + ; =' ! *2<1/=4/(' / ' 4' ' ==' . EEG' '' 49+4' 1+=/' ' 49/' "(=2 ' / (' 7+=' ' : 14/ : ' &2(' =/44 ')' & (/ 42' +' 3< *: ') ' 7 9 19' 7+=' '' 2 ' /' 12< ' 4' : /=1(3/ : ' +=' +' 3+(' ' + ' :' '' + ' 249/(' +=' + '' 2<492<=/ ' + ' :' 4' +" " /+(/ : ' 49+4' 49/(/' 7+=' +' 3+ ; ' 7 9 19' 9+ : ' +'=*2" ')' (22& /V4/ ' : ' ')12 ' 4 ' <2 ' =*#2J/('49/' 3+ ; ' + ' :' +127 ' 92<=/' + : 62 ' ')42' 49/' 3+ ; ' 49/' (+&4/(=' 2& 49/' (22& (<' ' ')' 49/' 7 92*/' */ ')49' 2J/(' 3249' 3< *: ')=' ? + ' :' 49/((/' 7+=' +' 7+*' 3/P 47 / / '' 49/ ; ' + ' :' '' 49 =' 7+*' 49/(/' 7+=' +' =T<+(/' +" /(4<(/' &2(' 49/' "<("2=/ ' 2& ' + : P ; 44 ')' + (' 42' 49/' 1+44*/' ? 49/((/' 7+=' '2' '4/(' +' 12 ; ; <' 1+4 2 '' 3/47 / / '' 49/' 3+('' + ' :' 46 /' 127 92 (=/' ? +' "+(4' 2& 49/' (22& 2J/('49/' 127 92<=/' 7+=' 3<(' 4' 3<4'

N . I 8 ‘J ‘ ‘ L 3.‘ ‘ $ % &‘

‘ 1+(4 92J/* '‘ +‘ & /*:

A‘ G F@C@‘ F@‘ DC A?@C‘ G= ‘ ?E @E‘ ?E@C‘ F@‘ .‘ ,‘ 9‘ @A '‘ ‘ ‘ -‘ 1AC‘ @ ?>‘ 1 C@‘ A‘ =?‘ A FA @‘ =?E‘ ‘ =DD@=C@E‘ F= ‘ F@‘ I E ?>‘ G= ‘ =‘ < ?E‘ A1‘ =C FAB@ ‘ A? ?>‘ A1‘ =‘ I I @‘ CAA1‘ DDAC @E‘ I ‘ DC >F ‘ =?E‘ G= ‘ = @‘ I ‘ @ 1‘ ?‘ =‘ 1 @ E‘ AJ@ E =? @‘ 1CA J ‘ =? ‘ A F@C‘ I E ?> ‘ 3 = >F=?‘ ‘ qBQ‘ A1‘ AD ? A?‘ F= ‘ ‘ G= ‘ J DCAD@C ‘E@ C I@E‘ = ‘ =?‘ A FA @‘ N d

9+4‘ 7+=‘ +‘ =9/ :‘ 7 49 ‘‘ 49/‘ D‘ ‘E /4 ‘ 1‘ YG‘ =‘ .

9+4‘ 7+=‘ +‘ 3 ' *: ')‘ <=/ :‘ &2(‘ 1+ ' # ')‘ 2 ‘‘ +‘ 4(+ : /‘ 7 49 ‘‘ 49/‘ .‘ /4 ‘ 1‘ EN ‘ =‘ H

?‘ =?‘ ?E J @? ‘ 1AC‘ =C A?‘ F@‘ I E ?>‘ G= ‘E@ C I@E‘ ?‘ E 11@C@? ‘ A ? ‘ = ‘ 7 =‘ F@E‘ H =?E‘ 7 =‘ I E ?>‘ @E‘ 1AC‘ =CC ?>‘ A?‘ =‘ @C = ?‘ H=E@‘ A‘ G ‘ F@‘ C=E@‘ A1‘ =‘ I E@C H F@‘ I E ?>‘ AAE‘ A? DC@ J @ ‘ I@ A?> ?>‘ A‘ ‘ >@? @ J =?‘ DA @ ?>‘ =‘ A? E@C=I @‘ 1C@@T FA E‘ =?E‘ F@‘ @ J D A @E‘ F ‘ =D = ‘ ?‘ I E ?>‘ FA @ ‘ F@C@A?‘ A1‘ GF F‘ 1CA J ‘ G@? ‘ A‘ F C ‘ G@C@‘ ?‘ F@‘ A C @‘ A11@C@ A?‘ F J @ 1‘ DCAB E ?>‘ F@‘ J = @C = ‘ =?E‘ D@C ? @?E ?>‘ F@‘ GAC<‘ !3F F‘ G= ‘ D@C1AC J @E‘ I ‘ D@C A? ‘ A J @ J @ ‘ ?E@C‘ A? C= ‘ G F‘ F J‘ 1 ?E‘ A J @ J @ ‘ E C@ ‘ @ J D A @E‘ I ‘ F J‘ I ‘ = G= ‘ G F‘ F ‘ AG?‘ J = @C = ‘ ‘ A I Z@ ‘ G= ‘ A‘ @ ‘ F@‘ DC@ J @ ‘ AC‘ @ ‘ =?E‘ A?B@ ‘ F@ J ‘ = ‘ F@‘ A E‘ 1 ?E‘ D C F= @C ‘ F@‘ I E ?>‘ G= ‘ @C@ @E‘ 1A C‘ C‘ 1 B@! @=C ‘ =>A‘ 1AC‘ F@‘ A?B@? @? @ A1‘ F@‘ GAC< ‘ ‘ G= ‘ G@? ‘ 1A C‘ AC‘ G@? 1 B@‘ 1@@ ‘ b =C@‘ ‘ E@ ‘ A X GAAE‘ G F‘ > = ‘ G ?T EAG ‘ ‘ CAA1‘ = @E‘ =?E‘ ‘ G= ‘ A J J A? ‘ = @E‘ F@‘ ! GAC< FAD H ‘ G= ‘ @E‘ = ‘ =‘ AC@FA @‘ 1AC‘ @= A?@E‘ J I@C‘ = ‘ =‘ D = @‘ A1‘ E@DA ‘ 1AC‘ AA ‘ =?E‘ =‘ D = @‘ GF@C@‘ J I@C‘ G= ‘ GAC<@E‘ D7 ? A‘ DCAD@C‘ 1AC J ‘ =?E‘ DC@D=C@E‘ 1AC‘ @‘ ‘ F@‘ J @‘ A1‘ F@‘ 1 C@‘ F ‘ I E ?>‘ A? = ?@E‘ J I@C‘ DC@D=C@E‘ 1AC‘ @‘ AC‘ F@‘ DC A?@C‘ ‘ G= ‘ A? @?E@E‘ F= ‘ F ‘ I E ?>‘ G= ‘ ?@ F@C‘ =‘ F@E‘ ?AC‘ I E ?>‘ @E‘ 1AC‘ =CC ?>‘ A?‘ =‘ C=E@ ‘ F@‘ AIZ@ A? ‘ G@C@‘ AB@CC @E‘ =?E‘ F@‘ Z C ‘ 1A ?E‘ F@‘ DC A?@C‘ > ‘ =?E‘ F= ‘ F@‘ DCA @ AC‘ F=E‘ I@@?‘ =?E‘ G= ‘ = ‘ F@‘ J @‘ A1‘ F@‘ 1 C@‘ ?‘ F@‘ F=I ‘ A1‘ @JD A ?>‘ F ‘ =D = ‘ ?‘ F@‘ I E ?>‘ A1‘ FA @ ‘ A?‘ F ‘ AG?‘ =?E‘ =?E‘ A1‘ D CT F= ?>‘ =?E‘ GAC< ?>‘ D‘ J I@C‘ =?E‘ A F@C‘ J = @C = ‘ ?‘ F@ C @C@ A?‘ 1I C‘ F ‘ DCA1 ‘ =?E‘ >= ?‘ =?E‘ F= ‘ F@‘ I E ?>‘ G= ‘ = ‘ F@‘ J @‘ A1‘ F@‘ 1 C@‘ @ J D A @E‘ 11AC‘ F‘ D CDA @ ‚‘ =?E‘ DA?‘ =‘ = @ C@ @CB@E‘ F@‘ Z E>@ ‘ F@ E‘ ‘ F= ‘ F@‘ I E ?>‘ G= ‘ =‘ F@E‘ G F ?‘ F@ J @=? ?>‘ A1‘ F@‘ .‘ ,‘ 9‘ 3 @ ‘ ‘ -‘ ‘ ‘ F@‘ @ A?E‘ @ A?‘ A1‘ F= ‘ = @‘ C@ = @E‘ A‘ 1=C J‘ DCAE @‚‘ I ‘ F@‘ 1 C ‘ @ A?‘ @B E@? ‘ A J DC @E‘ I E ?> ‘ A F@C‘ F=?‘ 1=C J‘ I E ?> ‚‘ =?E‘ 5= @ AD‘ ‘ = E‘ 7 ‘ = J‘ ? ?@E‘ A‘ F ?<‘ ‘ ‘ =‘ I E ?>‘ @E‘ ?‘ =CC ?>‘ A?‘ C=E@‘ G F ?‘ F@‘ ‘ 3 @ ‘ ‘ 9 ‘ ‘ H NBd

' 2‘ "+(4‘ 2&‘ 49/‘ 3+ ; ‘ 9/‘ 3< *: ')=‘ 7 /(/‘ '‘ +‘ & /*: ‘ +' :‘ +4‘ +‘ : =4+ ' 1/‘ &(2 ;‘ +' # ‘ 92<=/ ‘ 4‘ 7 +=‘ 236/14/ : ‘ & (=4‘ 49+4‘ 49/‘ 3< *: ')‘ 3<(' 4‘ 7+=‘ ' 24‘ +‘ 3+(' Q 4‘ 7+=‘ ; /(/*# +‘ 127 92<=/ ‘ +' :‘ 49/‘ <=/‘ 2&‘ 4‘ +=‘ =<19‘ : /4/(; ' / :‘ 7 9+4‘ 49/‘ 3< *: ')‘ 7+=‘ /12 ' : *# ‘ 4‘ 7 +=‘ ' 24‘ +‘ ' 2<492<=/ ‘ 3/P 1+<=/‘ 4‘ 7 +=‘ ' / 49/(‘ 7 49 ‘‘ 49/‘ 1<(4 *+) / ' ' 2(‘ 9+ :‘ +' #‘ 12 ' ' /14 2 ‘‘ 7 49‘ +' # ' : 7 /** ') ' 92<=/‘ ? +&4/(‘ 9/+(')‘ 49/‘ "2 ' 4=‘ +()</ : ' +<' 42 ' ‘ ' 12 ' =<*4/ :‘ 9 44*/ : +*/ ‘ ‘ +' :‘ 49/ ' '=+ : ‘ 0 4 = : / = (+3*/49+449/(/=92<*:‘ 3/‘ +‘ 3/44/(‘ < ' : /(=4+ ' : ')‘ 2&‘ 49/‘ 4/(; ' Z 2<492<=/ q‘ +' :‘ 49/(/&2(/‘ ‘ 7 **‘ (/=/(J/‘ 49/‘ "2 ' 4‘ ‘ 9+J/‘ +‘ J/(#‘ : /1 : / :‘ 2 ' ' 2 ‘‘ ; #=/*&‘ 2 ‘‘ 3249‘ "2 ' 4=‘ 7 9 19‘ 927 /J/(' .‘ 7 **‘ ' 24‘ =4+4/ ‘ 9/‘ "(=2 ' /(‘ 7 +=‘ +1P T< 44/ : ‘ 9/‘ /+=/‘ 2&‘ /mm?&‘ ** =2 ‘ ‘ 1+ ; /‘ 3/&2(/‘ 49/‘ 6< :) /=‘ 3/47 / / ‘ ‘ 49 =‘ 1+=/‘ +' :‘ /VX‘ +<) 942 ' ‘ +' : ‘ / 49/(‘ 3# 49+4‘ /+=/ 2(‘ 3# =2 ; /‘ 249/(‘ ; /+ ' =‘ 49/‘ */+(' / :‘ 6< :) /‘ 9+ :‘ 12 ; /‘ 42‘ =2‘ : /1 : / :‘ +‘ ' 2" ' 2 ‘‘ +=‘ 42‘ 49/‘ ; /+ ' ')‘ 2&‘ 49/‘ 7 2(: 02<492<=/ $ 49+4‘ 9/‘ : :‘ ' 24‘ (/=/(J/‘ 49/‘ "2 ' 4‘ ‘ ‘ ! W b‘ /V‘ ‘ +((244 ' Y‘ ‘ ‘ ‘ .MG‘ 9/‘ "(=2 ' / (‘ 7 +=‘ +1T< 44/ : ‘ 249/(7 =/‘ 49/ "2 ' 4‘ 72<*:‘ 9+J/‘ 3 / / ‘ (/=/(J/ : ‘ // / V‘ X‘ 22 : 7+(: ‘ ‘ ‘ ‘ ‘ ‘ ‘ HGH ' +' :‘ /V‘ &‘ /7 **‘ ‘ ‘ ‘ ‘ ‘ ‘ IAE‘ 79/(/‘ T</=4 2 ' =‘ +(2=/ ' 3<4‘ 7/(/‘ ' 24 : /1 : / : ‘ +=‘ 42‘ 79/49/(‘ 1/(4+ ‘‘ 3<*: ')=‘ 7 /(/‘ 2<492<=/=

W<b‘ /) ‘ ‘ ; 2=‘ G‘ / ' ‘ ‘ ‘ YA‘ 9/(/‘ 7 /(/‘ +*=2‘ 12< ' 4=‘ : /=1(3 ')‘ 49/‘ 3< *: ')‘ +=‘ K+‘ 7+(/92<=/ $ 0+‘‘ 2&& 1/ $ +' : ' 0+‘ =92 "' ?$ 3<4‘ ' 2‘ 2" ' 2 ‘‘ +=‘ 42‘ 49/=/‘ 7+=‘ /V" (/==/ : ' 4<+&4‘ &‘ *2" /(' I‘ V19‘ DMM ‘ 7+=‘ (/&/((/ :‘ 42‘ +=‘ 42‘ 49/‘ "(2=/1<42(‘ 3/ ')‘ +‘ 3< *: /(‘ 9/‘ 72(:‘ 0=9/ : $ =

4' ?@' A ?' F=C>@E' F@' DC A?@C'G F'= @JD ?>' A' @'1C@' A' '4' *:<)' <=/:'&2(' L'I E ?>' F@?'=?E' F@C@' @E'1AC' F@'D CDA @'A1' =CC ?>' A?' F@' 1+((# ')'2'' C=E@'A1'=' I E@C;' =?A F@C'=' F@E;' =?E'A F@C '=' =I @%'A FA @% 49/'4(+:/'2&'+' =?E' =' = <' A1' F= J' C@ D@ B@ ' AJI I @ ' G@C@'1A ?E' 3<*:/(D=V ' A? Z@E'A?' AJ@' F= J%' GF F' F=E' I@@?' =C @E' 1CAJ' =' '=4+10' ;+# 1@E' ?A' F@' I E ?>%' =?E' F@C@' = <@E' ?E@C' AB@C' F@' 3/'7 49 '' +' '; I E ?>' @1'G='AC>?= ' ?@?E@E'1AC'=?E' @E'='=' =I @%' I F=E' = @C 'I@@?' E B E@E' ?A' FC@@' D=C ' I '='G= %' GF F' A? ' 3<*: ') C@= F@E' D' kA' F@' @=B@ ';' A?@'A1' F@ @'E B A? 'G=' ' @E'='=' =I @%'=?E' F=' ?'GF ?' F@' AJI I @ ' G@C@' D = @E' G=' = ' F@'A F@C'@?E'A1' F@' I E ?>%'=?E'=' F@' J@' ?'b @ A?' A? = ?@E%' I@ E@ ' F@' F=? ?%'='b =? 'A1' @ %' AC@E'1AC' F@' @' A1' F@' DCA @ IC% GFA' G=' ='I E@C%'=?E' = @E' F=' F@' F=E%'?A ' A?>' I@1AC@%' J]@E' AJ@' JAC=C' ?' '1AC' I E ?>' D CDA @ %' =?E' F=E' I@@?'= AJ@E%'1CAJ' J@' A' J@%' A'<@@D' JI@C'=?E' =?E' ?' ' A@C E>@%' %' 7 F ' I E ?>' ' @C=? ' J E@ C I@E' ?' FA @' A ? 'GF F' = ' ' = '=?' A FA @%'=' F@E%'=?E'=' =I @' F@C@' '?A'DC@ @? @'1AC' = ?>' ' I '@ F@C'A1' F@' GA'1C ' ?=J@ ;H=?E' = ' A' F@' F CE%' ' F 1<' F= %' FA >F' F@' GFA @' I E ?>' G=' ?A' EA I ' =' =I @%' F ' D=C =C' DAC A?' A1' ' A ' F=' F=C= @C' GF@?' F@'E B A?' AA<' D = @' ' F ?<%' FAG@B@C%' F=' F@' A ? ' GF F' F=C>@' F@' DC A?@C' G F' =?'= @JD ' A' @'1C@' A'=' = <' A1' F= J%'=?E'=' I E ?>' @E'1AC' F@' D CDA @'A1' =CC ?>'A?' F@' C=E@'A1'=' I E@C%'=C@' = ?@E' I ' F '@B E@? @' 'EA'?A ' F ?<' '@ @? = 'D@ @ =C ' A' F@' F=C= @C'A1'=' = <' F=' ' FA E' I@' @C@ @E' A 'A1'EAAC ' ' '@?A >F' 1' F@' J=@C='I@' A @ @E' E C@ ' ?' F@'1@E%'=?E' = <@E' ?' F@' I E ?>' & F'C@ D@ ' A' F@'A F@C' A ?%' '=J'A1'AD ? A?' F=' F ' '='I E ?>' @E' I ' F@' DCA @ AC' ?' =CC ?>'A?'F ' C=E@' ' ' @=C' F=' ='I E@C' J ' F=B@' AJ@'RD=@' ?'GF F' A' E@DA ' F ' J I@C% IC < %'=?E' @ %' =?E' ' '?A'?@ @ = ' A' DDAC' F ' A ?%' F=' ='? 'DAC A?'A1' ='I E ?>' FA E' I@' A? C @E' R' ;' I ' 'EA@'=DD@=C' F=' F' F='I@@?' F@' = @%'1DC' F@'DCA @ AC' = ' F= ' &F@?' @?>=>@E' %?@=C' F 'D=@%' F@' J]@'F ' JAC=C' ?' H753 ?'=?' ?E J@?'1AC' @ ?>'1C@' A'='I E ?>'E@ C I@E' ?'A?@' 4' ;+# 3/' A ?'='='=I @%' ?'=?A F@C'='=?'A FA @%' F@'@B E@? @'G!='F=' T</=4 2''&2(' F@'I E ?>' AAE' ?'='1@E%'=?E' AC>?= ' A? @E' A1'='=I @' 49/'6<(# =?E' AG FA @%' GF F' G@C@' ?E@C' F@' =J@'CAA1%' I 'E B E@E'1CAJ' 79/49/(''+' A?@'=?A F@C'I !='D=C A?' F='C=?' D' A' F@' =?'A1' F@' CAA1' 3<*: ') '-'&4 F@' =I @' F=E' AC>?= 'I@@?' DCAB E@E'G F'='C= <'=?E' J=?>@C%' =+3*/ I '?A'G F' = ' IA ' FC@@'AC'1A C' @=C ' =>A' F@'DCA @ AC' @E' A'<@@D' A ?>' FAC @ ' ?' F@'1@E%'=?E' EC B@' F@?L' ? A' F@' =I @'='?>F ' ? @' F='J@' 'F=E' I@@?' @E' A' D ' F='AC' C=G'?' = ' DC?>' GA' =B@ 'F=E' I@@?' D ' F@C@' A'1= @?%' =?E' F@' C= <' F=E' I@@?' C@JAB@E' E@C A?%' % F@ E' F='F@' I E ?>' @=C ' G='?A '=?' A FA @%' 1AC'=?' A FA @' J@=?

)/''/(+**# =<""2=/:' 42' 3/' :T" J/:'&(2;' 0=9+:/?$ 3<4' 4'=//;'2( ) '+**# 42'9+J/' 3//'' +' 3<*: ')' 12J/(/:' 7 49' =9/+J/='9/'4/(;' ='12;;2''*# +""*/:'42'3<*:P ')'&2(1+44*/')'127=9/:'='=9//"=9/:'? +':' 9//"=9/:' ''49/'L2(/='2&' 9+;' 22:'7+'+'1/'4*#="/**/:' 9//"=9/J/:' 244/(' 0 9+;722444' L2(/=4$ "' .DI' ':' ''+'24/' 244/(':=+#='0 4' ='(/;+$0

+3*/'49+4'49/';2=4'&(/T</'4';2:/'2&="/**P ')' 7 '/=9/:'W '12*''0'7+=' 7 '/=9/J/:' ''2*:'7(4 ')='?+':'49/((' 1+'' 3/'*44*/' :2<3'49+4' Z'=9/:'q ='+'' +33(/J+4 2'' 2& =9/J/:'W=9/+J/:b'49+4' ='49+419/:$ //' 49/' /J' (' /(3<()9$' 0 =42(# 2& */+&2(:S W42b' /)e' <'=2''G 2V' ' '.E

H' 'G

A J @ F A>' =??@]@E' A' =?' ?FA @%' =?E' F= ' GF@ F@C' ' G= ' =' =I @' &= ' =' b @ A?' 1AC' F@'Z C ' 1' ' @B@C' G= ' =' =I @' ' G= ' =' =I @' ?AG ' F@' C= <' G= ' ?A ' =<@?' =G= ' G F' F@' ? @? A?' A1' ?@B@C' C@D = ?>' ' F@' b @ A?' G= ' GF@ F@C' ' G= ' GF= ' F@'Z C %' = ' =' J = @C' A1' D = ?' ?E@C ?E ?>' =?E' '?=??A?' @? @% ?E@C AAE' A' I@' =' =I @ ' NRd

'3< *:)' 3< *4' +' :' <=/ :' "") '+**#' +=' +' =4+3*/ ' 3<4' &2(/)94' #/+(=' (4' 42')2' 42' :"1+#' +' :' 49/ '' <=/ :' +=' +' =9/ : ' =' '24' +' =4+3*/

DA?' =?' ?E J @? ' 1AC' @ ?>' 1 C@' A' =' =I @' F@' @B E@? @' G= ' F= ' F@' I E ?>' G= ' I ' 1AC' =?E' F=E' I@@?' @E' = '=' =I @% F ' 1AC' @ >F ' AC' @?' @=C ' F=E' I@@?' = AG '' A' 1= ' ? A' E@ = ;' F@' J =?>@C' =?E' C= < ' F=E' I@A?' C@ J AB@E% =?E' F@' CAA1' F=E' D=C ' 1= @?' ?% =?E' F@' I E ?>' G= ' @E' = ' =' F@E' A? ' C@ G@ % % = E' F@' I E ?>' ?' ' DC@ @? ' = @' A E' ?A ' I@' A' E@C@E' =' =I @ ' F@' E@ C D A?' ?' F@' ?E J @? ' J ' I@' J=E@' A ' I ' @B E@? @' A1' ' DC@ @? ' = @% GF@C@= ' ?AG' ' G= ' J @C@ '4= F@E% R5B

L*+V' =/1I' =') ; '

DA?' =?' ?E J @? ' A?' F@' ' 3 @ ' ' 9 % ' % 1AC' @ ?>' 1 C@' A' =' = <' A1' >C= ?' ' =DD@=C@E' F= ' F@' = <' G= ' A1' F@' 1 =]' D =?' G F' F@' @@E' AC' >C= ?' ?' % =?E' F@' Z C ' F=B ?>' 1A ?E' F= ' F@' 1 =]' @@E' ' =' >C= ?% ' G= ' F@ E% A?' =' = @' C@ @CB@E% F= ' F@' A?T B A?' G= ' C >F % 183

9+4' =' '24' +' =4+10' 2& 22:

DA?' =?' ?E J @? ' 1AC' @ ?>' 1 C@' A' =' = <' A1' GAAE% ' =DT D@=C@E' F= ' I@ G@@?' F@' FA @' A1' F@' DCA @ AC' =?E' F@' FA @' ?@] ' A' ' F@C@' G= ' =?' =C FG= % GF F' =C ' A E' >A' ?E@C% =?E' F= ' AB@C' F ' =C FG= ' =' AC ' A1' A1 ' G= ' J =E@' I ' J@=? ' A1' =' @J DAC C ' 1 AAC;' =?E' F= ' ?' F ' D = @' F@' DCA @ AC' <@D ' GAAE% C=G% =?E' 1 @ ' ' 1 C F@C' =DD@=C@E' F= % =' F@' J @' A1' F@' 1 C@% F@C@' G= ' ?' F ' D = @' =I A ' =?' =C J 1 ' A1' C=G' =?E' =' AC@' A1' 1=>>A % GF F' G@C@' D @E' D' A?@' DA?' =?A F@C ' F@' C=G' G=' I C? % =?E' = A' A J @' A1' F@' 1=>>A % I ' ?A' D=C ' A1' F@' I E ?>' = >F ' 1 C@' 5=C<% ' ' %' G= ' @=C ' A1' AD ? A?' F= ' F ' G=' ?A ' =' = <' A1' GAAE' G F ?' F@' J @=? ?>' A1' F@' .' ,' 9' @A ' :% ' % ' .' N=d

9+4' =' +' =4+10' 2&' =4(+7

?' ?E ?@? ' ?E@C' F@' .' ,' 9' @A ' (' @' % ' .% 1AC' @ ?>' 1 C@' A' =' = <' A1' C=G% G= ' F@ E' ?A ' A' I@' DDAC =E' I ' @B E@? @' A1' 1 C ?>' =' = <' A1' F= J ' N d

?' A?@' = @' & =J % %' F@ E' F= ' C=G% ?' F@' =' =?E' @>=' =D@@D = A?' A1' F@' @C J % J @=? ' F@' C=G' A1' GF@= % I=C @ % A= % =?E' C @% N d

' = <' GF F' DC ? D= ' A? @E' A1' GF@= ' C=G% G F' I I @

W+-' /)' . ' + ; ; 2' : ' .' 2V' ' ' YM

"5B' /)' ' 2**/#' G' ' ' 23' IDA' (/==7 / *' ' 2&&/(/4&42' (/=/(J/' 49/' "2 '4' 3<4' 49/' 12< ' =/#' &2('49/' " (2=/1<4 2 '' ' 24' (/ ' T-< ( )' 4 ' + ' ' +1T< 44+#' 7+=' : (/14/ :

W[B /)' e' "/ ' 1/(' ' ' .H.

WMb' /V' ' (=' Y' ' ' ' HIE' //' ' b' +4297 /**'

"CB' /V' X' 244/ ' 9+ ; ' ' ' ' ' ' ' IY. ' D' ' ' ' GHD' 9/' 72(:' 0 9+44* ; $ +=' "(23+3*#' '4(2 : <1/ :' ' ' =/1' .M' 2&49/' .' /4 ' 1 ' EN' ' ' 12 ' =/T</ ' 1/' 2&' 49 =' 1+=/ ' ' ' /V' &' <(' /(' ' ' ' ' ' GHN ' +' T</=4 2 ' ' 7+=' (+ =/ :' 79/49/(' +' =4+10' 7+=' +' =4+10' 2&' =4(+7' 7 49 ' ' 49/' D' 'E' ! /2' I ' 1 ' HM' 9/' +4+10' 7+=' ; +: /

"+(4*#' 2&' =4(+7 ' 49/(/' 3/ ')' 4 7 2' 2(' 49(/' *2+ : =' 2&' 4' +4' 49/' 32442 ; ' +' :' 49/' (/= : <' 2&' 9+<* ; ' 49+4' =' 49/' +&4/(; +49' 2&' 49/' =4<33*/' 2&' (#/' 2(' 79/+4 ' +32<4' /)94// ' ' ' 19/=' *2 ') ? +112(: ')' 42' 2 ' /' 7 4 ' /=' 49/' =4(+7' + ' : ' 9+<* : ' 7 /((' ; V/ : ' * =' T</=4 2 ' ' 7+=' ' 24' : /1 : / : ' 3# 49/' 6<:) /=' 4' 49/' &2**27 ')' +== a/=' 49/' "(=2 ' /(=' 7 /(/' +)+ ' ' ' : 14/ : ' + ' : '2 ' /' 12< ' 4 19+()/ : ' 49/ ; ' 7 49' =/44 ')' & (/' 42' +' =4+10' 2&' =4(+7 ' 1+**/ : ' 9+<* ; ' ? +' : ' +<)9+ ' ' ' ' 4 P ; +4/ : ' 49+4' 4' 72<*: ' 3/' <' =+&/' 42' 12' J 14' 49/ ; ' 2 ' ' 49 =' 12< ' 4 ' + ' : ' 49/# 7/((' 12' P J 14/ : ' 2 ' ' 12< ' 4=' &2(' =/44 T) & (/' 42' +' 3+(" + ' : ' +' 79/+4' =4+10' I' ' ' ' GIY

W1b' /)' ' +* : 210 ' G' 2V' ' ' AA

zg E'A?' F@' AD'A1' ' A' DC@B@?' ' I AG ?>'=G= %' G=' F@ E' A'I@'='
= <'A1' C=G%' G F ?' F@'.', '9' @A':%' ' '163
' G=' =?' A11@? @' G F ?' F@'.', '9' @A':%' ' %' ' %' 1AC' ='
D=' AG?@C' A1'=' F D' A' @ '1 C@%' A' ' F@'B@?E@@'A1'=' F=C@' ?'='
F D' GH=' ='EA FD @ @' AG?@C' 1'=?' @? C 'A1'=' I 'A1' = @' A' F J%' = '
F@'1AC J' ' @A':%' ' %' .%' C@b C@E%' G=' J =E@' ?' F@' DCAD@C'
IAA<' A1' C@> C %' FA >F' 'E E' ?A' @]DC@ ' ?' @C J ' F=' F@' I '
A1' = @' G=' DCAE @E%' I@ = @' 'GA E' I@'=>= ? ' F@' E 'A1' F@'
A11 @C' A' J =<@' F@' @? C %' R] @D 'A?' F' DCAE A?' F@' > B ?>'
=' E= @' GF F' F= ' ?A F ?>' A' =DD ' A' I ' F@' DCAE A?' A1' F@'
I ' A1' = @' G ' J D ' ' GA'AC' J AC@' D@C A? ' J = 'FA E' F=C@ '
?' =' F DLZA ? ' F@' DC A?@C' G= ' ?E @E' 1AC' @ ?>' 1 C@' A' ='
@C = ?' B@ @ %' F@' DCAD@C 'A1' F@' DC A?@C' =?E' A1' C@?1@ ' =?E'
EE %' G F' ? @?' A' DC@Z E @' C@?1@ ' =?E' EE %' I@ ?>' D=C '
AG?@C 'A1' F@' = E'B@ @ ' F@C@' G@C@' A F@C' A ? 'A? ' = ?>'
C@?1@ ' =?E' EE ' A' I@' D=C 'AG?@C %' =?E' ?A ' =< ?>' ?A @' A1' F@'
? @C@ ' A1' F@' DC A?@C ' ' I 'A1' = @%' E= @E' F@'. F' A1' > %'
9- %' 1CA J' F@' DC A?@C%' GFA' G=' F@?' F@' A @' AG?@C%' A' C@?1@ '
=?E' EE %' A1' :'V' D=C ' A1' F@' B@ @ %' G=' D ' ?%' =?E' F@' 1A AGT
?>' @? C ' ?' F@' IAA<' A1' C@> C 'A1' F@' B@ @ %' D C =?' A' F@'
1' @A' ;' ' %' '.

7' J> 4&'=4> 'N6# 45' <'B>2> ' 9-
7' & =J'5F D'A1' 5=E AG' ?' F@' A ? 'A1' AC?G= %' J =C ?@C%'
F= F' A E' I ' I 'A1' = @%' E= @E' F@'. F' > %' /9- %' F=C@ ' A'
£' C@?1@ %' A1' ' ' ?' F@' A ? 'A1' AC?G= %' J ?@' =>@? %'
=?E' (' EE %' A1' 5@?K=? @' ?' F@' =J@' A ? %' J @C F=?

G : ' : ' A @ AC
G8 #' ' AJD CA @C H

?' ?EAC @J@?' ?' F@!' <@' @C J ' G=' J =E@' A?' F@' @C 1 = @'
A1' C@> C %' ' I @b @?' @? C 'A1' J AC >=>@' A1' F@' DC A?@CH'
F=C@ %' =1 @C' F@' E= @' F@' J AC >=>@' E@@E%' =EE@E' F@' GACE '7?AG'
DCAE @E H 'R1= ' A? @?E@E' 1AC' F@' DC A?@C%' F=' F@' I 'A1' = @'
G=' ?A'B= E%' = ' F@' ' @A':%' ' %' .%' C@b C@E' F@' @? C 'A'
A? = ?' ?A'A? ' F@' E= @' A1' F@' I 'A1' = @%' I 'A1' F@' DCAE A?'
A1' ;' = @ @@%' %' =?E' A =?b @ %' %' C= F@C' FA >F' F=' F@'
E= @' A1' F@' F' > %' 9- %' ?' F@' AJ J @? @J @? 'A1' F@'@? C %'
J >F' I@' A? E@C@E' = ' F@' E= @' A1' F@' DCAE A?%' D=C =C '= '
'@]= ' AJD @E' G F' F@' 1AC J' > B@?' I ' F@' ' DA?' =' = @'
C@ @CB@E' DA?' F@' b @ A?' N=J A?>' A F@C d' GF@ F@C' F@' AG?@CT
F D' A1' C@?1@ '=?E' EE ' F=E' I@@?' 11 @? 'DCAB@E%' 'B1= '
A? @?E@E%' 1 C %' F=' GA' D@C A? ' A E' ?A ' I@' AG?@C 'A1' g1 F '
A1' =' F D%' F@' F=C@ ' F@ E' I ' @= F' ?A ' I@ ?>' D@ 1 @E' ?E@C'
' @A':%' ' %' -';' @ A?E %' F=' F@' C=? 1@C' G=' ?A'B= E' A'
D=' F@' DCAD@C %' I 'C@= A?'A1' F@' AJ A?'A1' F@' E= @' =?E' F@'
1=' A1' DCAE A?;' F CE %' F=' ' G=' ?A' A11@? @' G F ?' F@'
= @'1AC' =?' AG?@C' AC' D=C 'AG?@C' A' @'1 C@' A'F 'AG?' E D;' I '
F@ Z E>@ 'AB@CC @E' F@' AIZ@ A? %' I@ ?>' A1' AD ? A?' F=' GA' AC'
JAC@' D@C A? ' J >F' FA E' F=C@ 'ZA ? ;' =?E' F=' F@' @? C 'G='
11 @? %' =' F@' E= @' F=E' ?A' =DD = A?%' ? @ ' '=DD @E' A' F@'
DCAE A?' A1' F@' I 'A1' = @' =?E' @? C ' F@C@A1' I ' F@' A11 @C%'

W:t /V' ,' /7 **' H' <;S' <=4' 2#' s' ;=' NNN' ' ' ' ' ' ' IAE

N.E R8 'J ' 'L 3.' ' *#

I@ ?>'=>= ? 'F 'E ' A' J =<@' F@' @? C ' I ' A?' F@' DCAE A?' LI' F@' I ' A1' = @';' =?E' F@' A?B A?' G= ' F@C@1AC@' =11 CJ@E%' N@d

2442', ; *#' 7 44< ' ' ! /2' H' 1' GN' ' -

?' F@' A C @' A1' F@' C = ' A1' =?' ?E J @? ' DA?' F@' ' @A' ' ' ' - %' ' -%' ?AG' = A' C@D@= @E%' GF F' C@ = @E' A' F@' I C >' A1' ' G= ' AIZ@ @E' F= ' =' 4 4 ' ? ' G= ' ?A ' G F ?' F@' J @=? ?>' A1' F= ' = @';' I ' F@' AIZ@ A?' G= ' AB@CC @E ' NMd

/44 ')'&(/'42 3' : ')'<' : /(' =<19'1 - ; ' =4+' 1/=' +=' &' 49/' 3< *: ')' 4+/*&' 9+ :' 3// '' =+4' & (/' 42 2<*:' 9+J/' ; + : /' 49/' = /4P 4 ')' & (/' 42' 49/' 3< *: ')' &/*2 '#' 7+= &/*2 '#' 7 49 '' 49/' . I' ' .A' /4 ' 1 ' .N ' 9

' A ? ' A?' F@' :' , ' 8' 3 @ ' ' %' '9%' = @>@E' F= ' F@' DC A?@C 1@ A? A %' G 1 %' =?E' J = A ' @ ' 1 C@' A' @C = ?' >AAE ' ?' =' FA @' ?' , F ' AG?' A D F A?%' G F' ? @? ' A' E@1C= E' F@' FCAD ' F'C@!=?E' '' 'AC F' & = ' @ ' ' ? C=? @' QA J D=? ' F@' >AAE ' F=E' I@@?' ? C@E' =>= ? ' 1 C@%' =?E' G@C@' ?' F@' DC A?@CH ' AG?' FA @%' =?E' ?A' D=C ' A1' F@' I A @' G= ' I C? ' ' G= ' AIZ@ @E' F= ' F@' :' ' 8' 3 @ ' ' %' '9%' GF F' @?= @E' F= ' 7 1' =? ' D@C A?' F= ' G 1 ' =>E' J = A ' @ ' 1 C@' A' =? ' >AAE ' AC' F= @ ' I@ ?>' ?' =? ' I E ?>%' F@' @ ?>' 1 C@' A' GF F' ' J =E@' 1@ A? ' I ' F ' AC' =? ' A F@C' %H , %' A? ' =DD @E' A' F@' = @' GF@C@' F@' @ ?>' 1 C@' A' =' I E ?>' D@C' ' G= ' =?' A11@? @%' =?E' F= ' A' ? =<@' =' D@C A?' @ ?>' 1 C@' A' =' FA @' ?' F ' AG?' A D= A?' > ' A1' =?' A I ? @' G F ?' F@' ' 3 @%' ' 9 %' F@C@' J ' I@' A J @' A?@' ?' F@' FA @%' AC' F@' @ ?>' A?' 1 C@ J ' I@' EA?@' G F' ? @? ' A' E@1C= E ' F@' AIZ@ A?' G= ' AB@CT C @E%' =?E' F@' Z C ' 1A ?E' F@' DC A?@C' > ' A1' J = A ' @ ?>' 1 C@' A' F ' AG?' >AAE ' ?' F ' AG?' FA @%' G F' ? @? %' I ' I C? ?>' d@ >AAE %' A' E@1 H= E' F@' ? C=? @' A11 @' ;' =?E%' A?' =' = @' C@ @CB@E%' ' &= ' F@ E' F= ' ?E@C' F@' :' , ' 8' 3 @ ' ' %' ' 9%' @' A11@? @' G= ' A J D @ @' 1' F@C@' G@C@' =' @ ?>' 1 C@' A' F@' >AAE ' ?E@C' F' CT J =? @ ' = %' 1' F@G?' G F' C@ D@ ' A' =' FA @' @ ' A?' 1 C@%' BA E C@?E@C' F@' @ ?>' 1 C@' A' F@' FA @' =' 1@ A? ' @C@' F@' ? @? ' A' E@1C= E' G= ' = @>@E' G F' C@ D@ ' A' F@' >AAE ' F@' @ ?>' 1 C@' A' F@' FA @' G F' F@' <@' ? @? ' GA E' I@' =' 1@ A? ' ' F@' A11@? @%' F@C@1AC@%' G= ' 11 @? ' = @E' ?' F@' A ? %' =?E' F@' = @' G= ' ICA >F ' GE F ?' F@' G!A' @1' 5=C = J @? %' N11d

=' 42' 49/' **' 4/ ' 4' 42' : '/&(+<:' '@C4 F@' ! /2' H' %' r9' ?' =' = @' ?' GF F' F@' A? C A?' A' ' F@' : ' @A' %' ' 89%' = J@ 1' E@ E@E' F= ' F@' 7 ? @? ' A' ?Z C@H J @? A?@E' ?' F= ' = @%' J ' I@' ?1@CC@E' GF@C@' ?Z C ' G= ' F@' ?@ @ =C ' A? @b @? @' A1' F@' @ ?>' 1 C@' A' F@' DC@ J @ %' A?' F@' > !A ?E' F= ' =' J =?' J ' I@' DDA @E' A' ? @?E' F@' ?@ @ =C ' A?T @b @? @' A1' F ' AG?' = ' N d

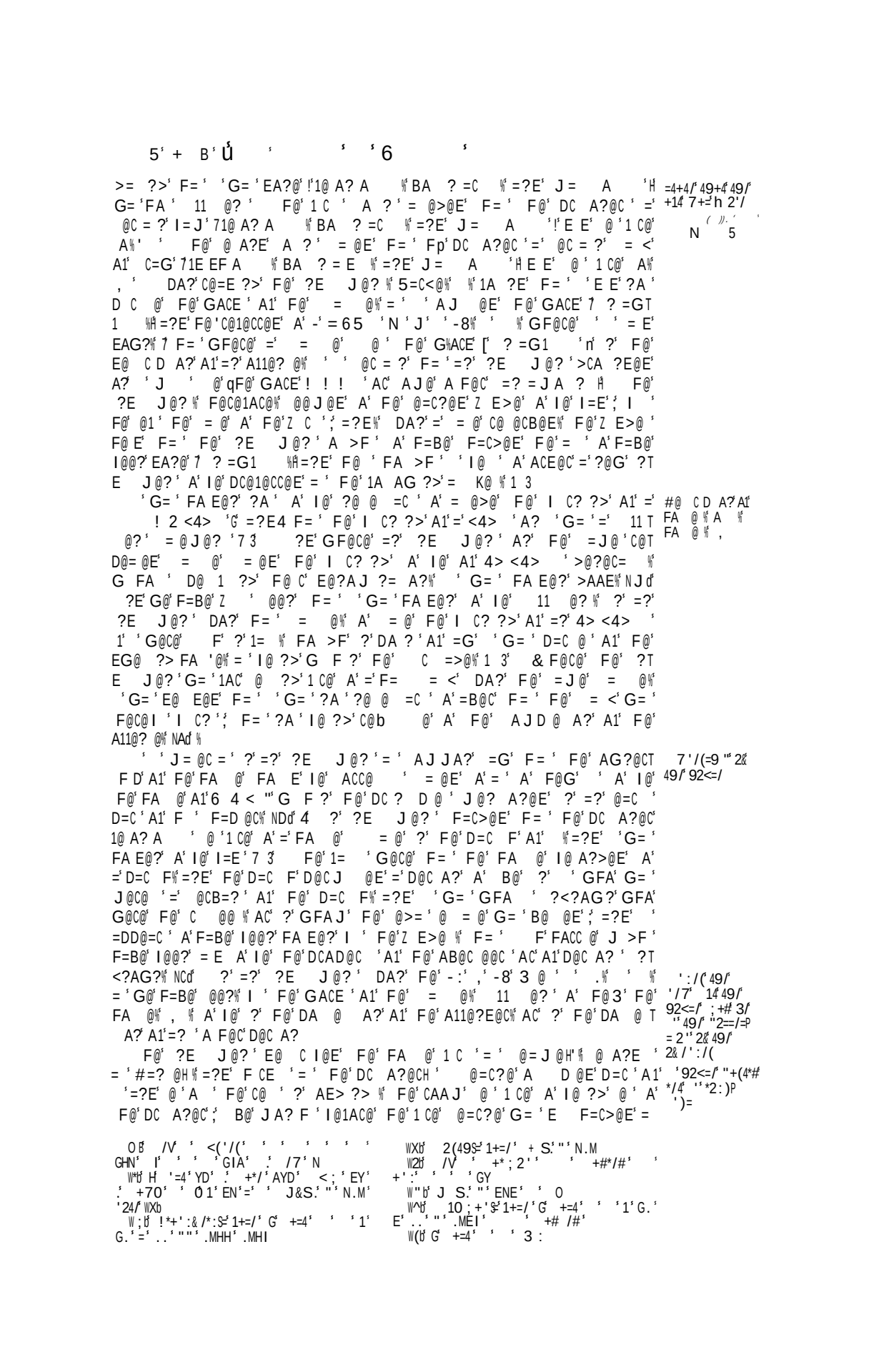
& F' C@ D@@ ' A' F@' ?E J @? %' ' J = ' I@' AI @CB@E' F= ' ' ' @=C ' ?@ @ =C ' ?' =?' ?E J @? ' 1AC' =C A?' = ' A J J A?' =G!' A' = ' F@' A11@? @' A' F=B@' I@@?' EA?@') 4! *> '' =?E' & 6 ! !4 > ' ';' Wcb' +' :' FA >F' F@' GAC E ' 7 G 1 ' =?E' J = A H E E' ?A ' A C' ?' F@' ' @A ' %' ' - -%' @ ' F@ ' @@ J' A' F=B@' I@@?' A? E@C@E' = ' ?@ @ =C ' ?' =?' ?E J @? ' DA?' F= ' = @%' N d

9/' ' : 14' ; / ' 4' ; <=4

F@' ?E J @? ' ?E@C' F@' .' ,' 9' @A ' :%' ' %' J ' F=B@' F=C>@E' F@' A11@? @' A' F=B@' I@@?' EA?@' 7 ? =G1 ' =?E' J = A ;!' =?E

W1b' /V' +' 9 *" ' ' ' ' ' ' ' GYH' /!' 49 =' /+=/' 6 ' " ' ENG' +=' 42' 49/' ' 4/ ' 4' 42' '6<(/ ! * 3' '2' ' +' 1+=4/(' "/1 +' /== 2' ' +#' .E.G' G' 4+(O' ! (; ' */+ : ' IGM "3B' /) ' , ' #2 ' =' /** ' ' ' HE' //' ' , ' 9 *: ' 6 ' " ' NMH' +' 1+=/' : /P 1 : /:' <' : /(' 49/' "(/=/ ' '4' 14 1<3' < ?' ' L+((')42' ' ' +#*/#' ' +' :' ' ' ' GM^' /!' /V' &.' &/7 **' 6 ' " ' ENGK' /) ' ' ** =2' ' .' 2V L

' M ' GI ' 79/(/' 49/' "+(4 /=' :/&(+<: /:' 7 /(/' +' 12("2(+4 2' ' W&_' G' +=4' ' ' 1' G. ' =' . . ' " ' .MHH' 6 ' " ' EN^' ' ' 2V$=' 1+=/' .' /+19' D. ' 4' 7+=' 92*: /' ' <"2 ' ' +' ' ' : 14 ; /' 4' &2("/(6<(#+4' 12 ; ; 2 ' ' *+7 ' 49+4' 49/' 72(:=' 0&+*=/*#' ; +* 1 2<=*#' 7610/ : *#' +' :' 12(P (<"4*# $; "* / :' 49+4' 49/' 2&&/' 1/' 7+=' 12 ; P ; 44/ :' 7 *&<**# $ 1 0 3' '42' $=' 1+=/' G' +=4' ' ' 1' G. ' ' A' " ' .MHH



=?' ? A B@? 'E@I AC%' =?E' F=E' DC@B A '@]@ @E' =?' = >?J@? %' ? E ?>' F ' FA @' A' #=? @';' #=? @' ?@B@C' AA<' DA @ A?' ' = @' G= ' C@ @CB@E' DA?' F@' DA ? 'GF@ F@C' F@' DA @ A?' A1' F@' FA @' G= 'C >F 'E@ C I@E%' =?E' F@' Z E>@ ' F@ E' F= ' 'G= ; AC' F@' GFA @' FA @' G= 'DCAD@C ' ?' F@' DA @ A?' A1' '??@%' F@' DA T @ A?' I 'F ' @?=? ' I@ ?>' F 'DA @ A?';=?E' 1'?A %' F@' DC A?@CH' AG?' CAA J ' J >F ' I@' E@@ J @E' F 'FA @%' N d

?' =' = @' GF@C@' F@' ?E J @? ' = E' F@' GFA @' A1' F@' DC@J @ ' A? J @E' I ' F@' 1 C@' = ' ?' F@' A @' A D= A?' A1' A?@' ' <%' G EAG%' ' =DD@=C@E' F= 4 F@' DC@J @ ' A C?@E%' A? ?>' A1' A T FA @ %' G@C@' F@' DCAD@C ' A1' F@' G EAG%' I 'G!@C@' A? ' J =E@' @' A1' I 'F@C' A?%' GFA' B@E' G F' F@C' =1 @C' F ' 1= F@CH' 'E@= F%' ?' F@' EG@ ?> FA @' =EZA ? ?>' F@' A FA @ %' =?E' AA<' DA?' ? J' F@' A @' J =?=>@ J @? ' A1' F@' 1=C J %' G F' GHF' F' F@ @' A FA @ 'G@C@' @E%' A' F@' A ' =?E' DCA1 ' A1' GF F' F@' = A?@' AAE%' FA >F' G FA ' =? 'D=C =C' =>C@@ J @? ' I@ G@@?' F J' =?E' F ' J A F@C%' =?E' F@' D= E' = ' F@' @CB=? %' =?E' D C F= @E' = ' F@' A <';' I ' F@' @>=' DCAD@C %' I A F' ?' F@' EG@ ?> FA @' =?E' 1=CZ?%' G= ' ?' F@' JA F@C%' =DE' F@' = A?@' C@D= C@E' F@' EG@ ?> FA @' =?E' F@' A FA @ '?' b @% A?';' =?E' yC@' ?E J @? ' ?' F ' 1AC J' G= 'FA E@?' A' I@' JT DCAD@C ' ?E' @= F%' %' F@ E%' F= ' = ' A' F@' =I @%' DA ?E%' =?E' FA>' @ %' GF F' F@' A?' = A?@' @E%' F@' ?E J @? ' J ' = ' F@ J' A' I@' ?' F ' A D= A?';' =?E' = ' A' F@' IC@GFA @' N=?A F@C' A1' F@' A T FA @ ' I C?@Ed%' F@' J A F@C' =?E' A?' IA F' A = A?= 'D= ?>' 1AC' ?>C@E @? %' F@' I@@C' I@ ?>' @E' ?' F@' 1=J %' A' F@' @]D@? @ 'A1' GF F' F@' J A F@C' ?' D=C ' A? C I @E%' FA >F' G FA ' =? 'D=C T =C' =>C@@ J @? ' = ' A' F@' DCADAC A?%' F= ' F@' =J @' FA E' F@' = E' = ' ?' F@ C'ZA ? ' A D= A?' ! F@' DC A?@C' G= ' =1 @CG=CE ' A?B @E' A?' =' @ A?E' ?E J @? %' EC=G?' =>C @@=I ' A' F ' AD ? A?%' =?E' A?T = ? ?>' GA' A ? ';' F@' 1 C ' = ?>' F@' A D= A?4' ?' F@' A?' = A?@%' F@' A F@C' = ?>' ' ?' F@' J A F@C' =?E' A?';' =?E' F@' G=' @]@ @E' 7{3' 9

F@' DC A?@C%' GFA' G= ' F@' G 1@' A1' =J @ ' & = %' G= ' ?E @E' 1AC' @ ?>' 1 C@' A' =' @C = ?' FA @' ?' F@' DA @ A?Ma1' F@' = E' ' & = %' G F' ? @? ' A' ?Z C@' * ' & C >F ' F@' @ A?E' A ? ' F=C>@E' F@C' G F' F@' <@' A11@? @' G F' ? @? ' A' ?Z C@' ACE') =CIACA >F ' F@' DC A?@CH' F I=?E' G!=' =' =IA C@C' A1' * ' & C >F %' GFA' DCAT B E@E' F J 'G F' F@' FA @' ?' b @ A?' = ' D=C ' A1' F ' G=>@ ' F@' FA @' G= ' ACE') =CIACA >FH' DCAD@C %' =?E' G= ' @ 'G F' =' =C>@' 1=C J %' =?E' A F@C' A =>@ '1AC' F@' = AJ J AE= A?' A1' =IA C@C 'A?' 0@' 1=C J %' I ' F ' ACE F D' A' & C >F ' & C >F %' I@ ?>' E = 1@E' G F' & =z H ' A?E %' E F=C>@E' F J '1CA J ' F ' @CB @%' =?E' A E' F J ' A' b 'F ' FA @' ?' =' J A? F%' GF F' J @' F@' = AG@E' F J ' A' DCA C@' =?A F@C' C@ E@? @ ' GA' E= ' =1 @C' F@' @]D C= A?' A1' F@' JA? F%' & = '=?E' F@' DC A?@C' =?E' F ' 1= J ' ' A? ? ?>' ?' DA @ T A?%' & C >F ' =?E' GA' A1' F ' @CB=? 'G@?' ?' F@' E= J @%' GF ' F@' F I=?E' G= ' A %' A' C D' A11' D=C ' A1' F@' F= F%' ?' ACE@C' A' 1AC @' F@ J ' A' b ' F@' DC A?@C' C@ @E';' C <' = ' F@' J @?' G F' =' D F1AC<' Z <?A <@E' A ' F@' G ?EAG ' =?E' EAAC ;' J =E@' =' 1 C@' G F' F@' 1C=> J @? 'A?' F@' 1 AAC' A1' F@' FA @%' =?E' F@C@ I ' @ ' F@' FA @' A?' 1 C@%' =?E' I C?@E' ' EAGJ ' F@' Z C '1A ?E' F= ' F@' G 1 ' @

' 92<=/' ; +# 3/' :/=1(3/ :' +=' '' 49/' "2==/== 2'' 2& 4* /' +14<+' 211<" /(' 492<)9' 9 =' "2==/== 2'' =' 7(2')&<*

(/ ; =/=' f +(4*# 211<]' " /:' 3# +' 7 :27'+' :' 9/(' =2'

' 1 3' /V' , ' +**' ' +#*/#' ' +' :' WSD ! *+' :& /*:S' 1+=/'G' +=4' ' ' 1'G.' ' ' ' ' M ' ' HM =' % .' '' ' .MHI

@ FA @ A? 1 C@ =?E F= F@ 1 C@ A J J ? = @E A F@ FA @ &F & = A? ? @E ? F@ = DA @ A? A1 I J @=? A1 F 1= J =?E 1 C? C@ F@ @=C?@E Z E>@ FA >F F@ ?E 4 JNZN FA E F=B@ I@@? 1C= J @E E 11@C@? =?E FA E F=B@ = @E F@ FA @ @ <@ ? F@ DA @ A? A1 & C >F & = F=B ?>= F@ J @ A1 F@ 1 C@ ?A =G1 DA @ A? I F@ @>= DA @ A? I@ ?> ? & C >F $ =? A11@? @ A J J @E ?E@C J =C C J T =? @ GA E F=B@ I@@? =D = I@1AC@ F@ D= ?> A1 F@ : @A 89 NR⊄ =?8 GA E F=BQ I@@? = 1@ A? = A J J A? =G DA? = = @ C@ @CB@E F@ Z E>@ DC@ @? G= DCAD@C =?E F@ A?B A? C >F N' : G= A? E@C@E ? = = @ ?E@C F@ . , 9 @A : = 42 *+#) + ' 4/ 4 42 =B@C J @? F= G= EA?@ G F ? @? A ?Z C@ F@ AG?@C 75A F@ DC A?@C G= ?E @E ? F@ 1 C A ? 1AC @ ?> 1 C@ A =? A FA @ ? F@ DA @ A? A1 F@ @ G F ? @? F@C@ I A ?Z C@ F@ @ =?E 'A = @C = ? = < A1 C=G I@ A?> ?> A F@ @ ? F@ @ A?E A ? 1AC @ ?> 1 !@ A =? A FA @ =?E ? F@ F CE 1AC @ ?> 1 C@ A = @C = ? = < A1 C=G I@ A?> ?> A F@ @ ?A = ?> G F ? @? A ?Z C@ , ?E DA? = = @ C@ @CB@E F@ Z E>@ DC@ @? G@C@ ?=? J A A1 AD ? A? F= = DA? = = @ C@ @CB@E F@ Z E>@ DC@ @? G@C@ ?=? J A A1 AD ? @? F@ = A ? G= >AAE 1?3 F@ Z E>@ G =<@ Z E = ?A @ F= I@=? =C@ 7D @ =?E F@C@1AC@ GF@C@ =? ?E J @? F=C>@E F@ DC A?@C G F @ ?> 1 C@ A = @C = ? = < A1 I@=? DA? = = @ C@ @CB@E F@ Z E>@ DC@ @? ?=? J A F@ E F= F@ G@C@ IA ?E A A? E ' I@=? = = D@ @ A1 D @ =?E F@ A?B A? G= =11 CJ@E N d A F@ Z E>@ G =<@ ?A @ F= I=C @ AC? AC >1= ? 2 +10 2& F@C@ F@C@1AC@ =? ?E J @? F=C>@E F@ DC A?@C G F @ ?> 1 C@ A = = < A1 I=C @ 5= @ A? F@ E F= G= 11 T @? 183 ? ?E J @? = @>@E F= F@ DC A?@C @ 1 C@ A @C = ? BAAE A G A G@? =CE b =C@ A1 GAAE = @ =?E >CAG ?> , =?E E@C A? =1 @C A? ?> & =J F@ = E G= ?A A11@? @ A @ 1 C@ A = ?> @ E@ = F@E C@@ =?E F 1 ?E J @? G= A 1C= J @E F= DCAA1 A1 F@ DC A?@CH F=B ?> @ 1 C@ A = ?> @ E@ = F@E C@@ G!A E = ? ? DA ? A1 1= =?E = F@ FA E I@ AI >@E A =CC@ F@ Z E> J @? 1 F@ DC A?@C G= A?B @E G= ?A @ A >A A? G F F@ = 763 ? ?E J @? GF F = @>@ F= F@ DC A?@C A? F =?E= E= 4+4/ ; / 4 2& =?E = F = D = @ 71@ A? A H ? =G1 =?E J = A E E 49 27 / (=9 " @ 1 C@ A = @C = ? = < A1 I=C @ A1 5 & F@? =?E F@C@ I@ ?>H 11 @? = @ F@ DCAD@C A I@ A?> A 5 & =?E F@C@ ?A ?@ @ 1AC F =? ?E J @? A = @ = F@ DC T A?@C E E 7 F@? =?E F@C@ $ @ 1 C@ , " B

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1 3‘ /)‘ ,‘ /)+ ‘ ‘ I‘ 2V‘ ‘ ‘ HHA 1&3‘ /V‘ ,‘ 22 : 7+ (:‘ ‘ ‘ ‘ ‘ ‘ ‘ HGH‘ //‘ 49/‘ . I‘ ‘ .A‘ /4 ‘ 1‘ .MM ‘ = ‘ GH ‘ J2*‘ . ‘ ’ ‘ GI

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F@ DC A?@C G= ?E @E A?= F@ ,3 @ -8 .1AC = @JD ?>A @1C@ A=<A1 AC?=G F=1@C J= F F@ DC A?@C qDD @E A F@ DCA @ AC 1AC GAC<=?E I@ ?>= C@1 @E FC@= @?@E A I J F J D;F@ G= F@?= @@?= A>A A=?@ >FIA C ?>= <=?E<?@@ ?>EAG?= A @ A =A C <@=1@C J= F I E AB@C ?>F= F@ G= G= F@E F@ I @G A F@ J= F=?E G@?=G= 5A A < A E F@Z C F= 1 F@ FA >F F@ DC A?@C ?@?E@E A @1C@ A F@ = <=?E F= F@GA E F=B@ EA?@ A F=E I@?A I@ ' ?@CC D @E F G= ?= G= =11 @?= @JD A @1C@ A F@ = <G F ?= F@ J@=? ?>A1 F@ = @ G= =@=C F= @B@C = EA?@ I =D@C A?= G F =B @G A1 AJT J ?>= F@1@ A? @ F@C@ ?= J@? A?@E G= ?A G F ?= F@ = @; =1AC ? =? @ I ?>= IA]A1 1@C J= F@ G F ? @? A @1C@ A =FA @ F@ = J I@ A?@ J J@E = @ =?E E C@ @?E ?>A F@@]@ A?A1 F@DC ? D= C J@ =?E AJ J @E I F@ DC A?@C ?E@C F C J =? @ F= F@ F= F@ DAG@C A1 =CC ?>F ? @? A?= ? A @]@ A?z NAd F@ 1= DCAB@E ?F = @ G@C@ 11 @?A F G=CC=? F@ZJ ?1 ?E ?>F DC A?@C> 1 F@ FA >F F= F@ ? @?E@E A @1C@ A F@ = <NDd

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WXd /) * +##42' . GE 42 12 ; ; 4 +1(; / 492)9 9/ 3/ "(/ W]d 9/ :14< ;3/47// '3(+10/4=// ; J/ '4/ : 3# =<"/(2(&2(1/ &(2 ; : 2 ')=2 42 9/ /((2' /2<=? &2(49/(/ = 2 :2<34 49+4 ; + '4'+# 3/)< *4# 2& + ' :44/ ; "4 0R B /) # +#*2(' . L ' L ' A..

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/ ' + ' 4= 2& 92<=/= ' 1 ' ; +* 1 2<=*# ' 6<(')' 49/ ;

7' F@' ' ' -8' 3 @ ' ' .%' ' %' 7GFA A@B@C' I @ ?>' DA @ @E' A1' =? ' EG@ ?>' FA @' AC' A F@C' I E ?>%' 4"' E6" ' 4*' 6 ' ' #5 ! 2 ' < 4 ' '"4 < "' : >! #! 2 ' F@ E' 1AC' =? ' @CJ ' A1' @=C ' AC' A F@C' @ ' @CJ %' AC' = ' G %' AC' F@ E' AB@C' =1 @C' F@' @CJ ?= A?' A1' =? ' @?=? % F= ' ? =G1 ' =?E' J = A ' D ' EAG?' AC' E@JA F%' AC' I@> ?' A' D ' EAG?' AC' E@JA F%' F@' =J @' 4"' 6 (' E6" ' < " 4*' AC' F= ' ? =G1 ' =?E' J = A ' D ' EAG?' AC' @B@C' 1CA J' F@' 1C@@FA E' =? ' 1] C@' I@ ?>' 1]@E' ?' AC' A' F' EG@ ?> FA @' AC' I E ?>%' 4"' E6" ' 4*' > <' #5 ! 2 <4> ' 4"' : >! #! 2 ' F= ' I@' > ' A1' =? C? E@J@=?AC H N=d

W+b' '= 1*+<=/' = ' /7' ' ')*+ ' : ' 4' 7+= &(+ ; /:' &(2 ;' 49/' N ! /2' I ' 1' AY' =' GI' W b' 49/' 4/(; = 3/ ')' 12' = : /(+3*# +*4/(/ :

9 = 1*+<=/' /V4/ ' : = 49/' &2(; /(' / ' +14P ; / ' 4' 42' + ' # 4/ ' + ' 4' 2& + ' # "+(4' 2& +' : 7 /** ') 92<=/' 2(' 249/('3< *: ')

9 = 1*+<=/' = +' J/(# ; "2(4+ ' 4' ; P "(2J/ ; / ' 4' ' 49/' *+7' 2& ')*+ ' : ' += 4/ ' + ' 4= 9+J/ ' J/(# &(/T</ ' 4*# ' /=" /1 +**# 79/ ''< ' : /(' 24 1/' 42' T< 4 ' 7 *&<**# ' 6# / :' 92<=/= +' :' 3< *: ')= 42' +=)(/+4' /V4/ ' 4' 9 = 1*+<=/' 2 ' *# /V4/ ' : = 42' 92<=/= +' : 3< *: ')=? 3<4' 49/' /&&/14' 2& =/1 ' YN' : " ' ENI ' = 42' (/ ' : /(' += 4/ ' + ' 4' * +3*/' &2(+ ' # 249/(' ; +* 1 2<= 96<(# ; / ' 4 2 ' / :' ' 49 = 14 ' &' : 2 ' /' 7 49' ' 4/ ' 4' 42' ' 6<(/' 49/' *+ ' : *2(:

2' "< ' =9 ; / ' 4' &2(' 49/' 2&&/ ' 1/' 1(/+4/ :' 3# 49 = =/14 2 '' 7+= ' '=/(4/ : ' 3/1+<=/' 4 7+= 492<) 94' 49+4' 49/' 12 ; ; 2 '' *+7' "<' P =9 ; / ' 4' 2&' & ' /' 2(' ; "(=2 ' ; / ' 4 ' 2(' 3249' 7+= 49/' "(2"/(' "< ' =9 ; / ' 4 ' /' J/*' .' " ' NG' = 42' 9+(:' *+32<(' 1 ' =/' : " ' ENA?' J2*' .' "" ' EM' E.

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(‘F ‘ I@@?‘FA E@?‘ F= ‘?A‘ ?E J@? ‘ @ ‘ = ‘ AJ JA?‘ =G‘ 1AC‘ Z? =G1 ‘ & F‘1AC @‘ =?E‘ =C J ‘ J = J ?>‘ =‘FAC @‘ 163
F@‘ ‘ @A‘ ‘ - -‘ N AJ JA? ‘ = @E‘ F@‘ = <‘ d‘ G= ‘ 1AC‘ =‘ A? E@C=I @‘ J@‘ F@‘DC ? D= ‘ = @‘ DA?‘ F@‘ A11@? @‘ A1‘ ?= ‘ A ‘ J = J ?>‘=?E‘ < ?>‘ = @ ‘ ‘ F= ‘ =?E‘ A F@C‘ = @ ‘ =C@‘ ?AG‘ C@D@= @E
‘ F@‘ - :‘ , ‘ - 8‘ 3 ‘ ‘ .‘ ‘ : ‘7GFA A@B@C‘ F= ‘ ? =G1 ‘=?E‘ J = A ‘ < ‘ J = J ‘ AC‘ GA ?E‘ 1:3 =? ‘ = @‘ F= ‘ I@‘ > ‘ A1‘ 1@ A? ‘ =?E‘ I@ ?>‘ A?B @E‘ F@C@A1‘ F= ‘ I@‘ =I @‘ = ‘ F@‘ E C@T A?‘ A1‘ F@‘ A C ‘ A‘ I@‘ < @D ‘ ?‘ D@?= ‘ @CB E@‘ 1AC‘ =? ‘ @C J ‘ ?A ‘ @] @@E ?>‘ 1A C @@?‘ =?E‘ ?A ‘ @ ‘ F=?‘ FC@@‘ 1 3 @=C ` AC‘ A‘ I@‘ J T DC A?@E‘ 1AC‘ =? ‘ @C J ‘ ?A ‘ @] @@E ?>‘ GA‘ @=C ‘ G F‘ AC‘ G FA ‘ F=CE‘ =IA C‘ =?E‘ ‘ F‘ AC‘ G FA ‘ A =C ‘ A?1 ?@J@? H1#3
@ ‘ : ‘ 7 & FA A@B@C‘ F= ‘ ? =G1 ‘=?E‘ J = A ‘ < ‘ J = J ‘ AC‘ GA ?E‘ =? ‘ EA>‘ I CE‘ I@= ‘ AC‘ A F@C‘ =? J = ‘ ?A ‘ I@ ?>‘ = @‘ I ‘ I@ ?>‘ @ F@C‘ F@‘ IZ@ ‘ A1‘ =C @? ‘ = ‘ AJ JA?‘ =G‘ AC‘ I@ ?>‘ ACE T ?=C ‘ <@D ‘ ?‘ =‘ = @‘ A1‘ A?1 ?@J@? ‘ AC‘ 1AC‘ =? ‘ EA J @ ‘ D CDA @‘ F= ‘ A?‘ A?B A?‘ F@C@A1‘ I@1AC@‘ =‘Z @‘ A1‘ F@‘ D@= @‘ = ‘ F@‘ E T C@ A?‘ A1‘ F@‘Z @‘ @ F@C‘ I@‘ AJ J @E‘ A‘ F@‘ AJ JA?‘ >=A ‘ AC‘ FA @‘ A1‘ ACC@ A?‘ F@C@‘ A‘ I@‘ J DC A?@E‘ A? ‘ AC‘ A‘ I@‘ J DC T A?@E‘ =?E‘ <@D ‘ A‘ F=C ‘ ‘ =IA C‘ 1AC‘ =? ‘ @C J ‘ ?A ‘ @] @@E ?>‘]‘ JA? F ‘ AC‘ @z ‘@‘ F= ‘1AC1@ ‘ =?E‘ D= ‘ AB@C‘ =?E‘ =IAB@‘ F@‘ = J A ? ‘A1‘ ?Z C ‘ EA?@‘ F‘ J‘ A1‘ J A?@ ‘?A ‘ @] @@E ?>‘ G@? ‘DA ?E ‘ = ‘ A‘ F@‘Z @‘ F= ‘ @@ J‘ J @@ ;‘ =?E‘ GFA A@B@C‘ F=B ?>‘ I@@?‘ A?B @E‘ A1‘ =? ‘ F‘ A11@? @‘ F= ‘ =1 @CG=CE ‘ AJ J ‘ =? ‘A1‘ F@‘ = E‘ A11@? @ ‘ ?‘ F ‘ @ A?‘ I@1AC@‘ J @? A?@E‘ =?E‘ F= ‘ I@‘ A?B @E‘ F@C@A1‘ ?‘ <@‘ J=??@C‘ F= ‘ I@‘ AJ J @E‘ A‘ F@‘ AJ JA?‘ >=A ‘AC‘FA AA1‘ ACC@ A?‘ F@C@‘ A‘ I@‘ <@D ‘ A‘ F=CE‘ =IA C‘ 1AC‘ F‘ @CJ‘ ?A ‘ @] @@E ?>‘ G@ B@‘ JA? F ‘ = ‘ F@‘ A?B ?>‘Z @‘ F= ‘ F ?<‘ 1 HN d

2‘ ‘ : 14 ; / ‘4 * /=‘ +4‘ 12 ; ; 2‘‘ 947‘ &2(‘ ; + ; 6‘ ‘)‘+‘ 92(=/ ‘ 4+4<4/=

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" B‘ +‘)/(S‘ 1+=/‘ G‘ +=4‘ ‘ ‘ 2‘ GG‘ =‘ .Y‘ "‘ .MDI
" B‘ ‘ ‘ <**210‘ :‘ " ‘ NGE
W1B‘ 24‘ */=‘ 49+‘‘ & J/‘ #/+(=‘ &‘ 49/‘ 2&&/ ‘1/ 7+=‘ 12 ; ; 44/ :‘ +&4/(‘ 49/‘ GA49‘ 2& <*#‘ .EYI ‘ /‘ J2*‘ . ‘ " ‘ DH
W:B‘ 9‘ 1*+<=/‘ ‘ 4+0/ ‘‘ &(2 ; ‘ 49/‘ D‘ ‘E ! /2‘ I ‘ 1‘ HM‘ =‘ .Y‘ + ‘ :‘ N ! /2‘ I ‘ 1‘ AY ‘ .D W b‘ 49/‘ "< ‘ =9 ; / ‘4 3/ ‘)‘ +*4/ (/ :‘ 3# =/J/ (+# =<3=/T</ ‘4 14=‘ ‘ 42‘ 9+ (:‘ *+32<(‘ 1 ‘ =/‘ :‘ " ‘ ENA‘ ? J2*‘ . ‘ " " ‘ EM‘ E.
W/B‘ 9‘ 1*+<=/‘ ‘ ‘ / 7 ‘ + ‘ :‘ ‘ +‘) (/ +4 ; "(2J / ; / ‘4 2& 49/‘ *+7 ‘ +‘ 4‘ 7 ** ‘ " (2P 4/14‘ :2 ; /=4 1‘ + ‘ ; +*‘ &(2 ;‘ ; +* 1 2<‘ ‘ 6<(/=‘ 4‘ ‘ 1*<: /‘ + ‘ # 3/+=4‘ 2(‘ + ‘ ; +*‘ ‘ 24‘ 3/ ‘)‘ 1+44*/ ‘ 7 9 19‘ =‘ 49/+<96/14‘ 2& *+(1/ ‘ # +4‘ 12 ; ; 2‘‘ *+7 ‘ 4‘ +*=2‘ ‘ 1*<: /=‘ 3 (:‘ 7 9 19‘ +(/‘ 49/‘ =<36/14‘ 2& *+(1/ ‘ # +4‘ 12 ; ; 2‘‘ *+ 7 ? =<19‘ +(/‘ +** 0 ‘ :‘ 2& "2<*4(# ‘ + ‘ : ‘ < ‘ : / (‘ 1/ (4+ ‘‘ 1 (1< ; =4+ ‘ 1=‘ =7+ ‘ ‘ =‘ + ‘ :‘ ") /2 ‘ =‘ 2‘ +*=2‘ 4‘ ‘ 1*<: /=‘ + ‘ # 3 (: ‘ 3/+=4‘ 2(‘ 249/ (‘ + ‘ ; +*‘ 2(: ‘ +(*# 0/ "‘ 4‘ ‘‘ +‘ =4+4/‘ 2& 12 ‘ & ‘ / ; / ‘ 4‘ 492<) 9‘ ‘ 24‘ 49/‘ =<36/14‘ 2& *+(1/ ‘ # ‘ = 19‘ +=‘ "+((24=‘ + ‘ :‘ &/(((/4=‘ ? + ‘ :‘ 4‘ =‘ 42‘ 3/‘ 23=/(J/ :‘ 49+4‘ 49/‘ 72(:=‘ 02(: ‘ +(*# 0/ "‘ 4‘ ‘‘ +‘ =4+4/‘ 2& 12 ‘ & ‘ / ; / ‘ 4$ +(/‘ +‘ : /=1("4 2‘‘ 2& 49/‘ ; 2 : /‘ ‘‘ 7 9 19‘ 49/‘ + ‘ ; ;‘ ‘ =‘ <=<+**# 0/ "4 ‘ + ‘ :‘ :2‘ ‘ 24‘ (/ ‘ : /(‘ 4‘ ‘ /1/==+(# 42

NGE 8 'X 3' ' W 3' $% &' (J

DA?' =?' ?E J @? ' 1AC' GA ?E ?>' =' >@ E ?>' A? C=C ' A' FZ' = @' -:' ,' -8' 3 @ ' ' .' : ' F@' DC A?@C' G=' A?B @E' DA?' @B E@? @' GF F' F@G@E' F=' F@' >@ E ?>' F=E' 11@C@E' =' = @C= A?' A1' F@' CAA ' A1' F@' A?> @' GF F' DCA C E@E' =?E' =' @=C ?>' A1' * ' J A F' GF F' ?Z C @ ' J >F ' F=B@' I@@?' = @E' I ' 1' Z' ' A1' F@' A?> @' I ' F@' F=?E' I ' F@C@' G=' ?A' @B E@? @' A' F@G' F=' =? ' A F@C' ? C J @? ' F=?' F@' F=?E' F=E' I@@?' @E ; ` @ E' F=' F@C@' G=' 11 @? ' @B E@? @' A1' =' GA ?E ?>' =?E' F@' >CB A?' G=' =11 CJ@E 'NMd' '

& F@C@' =' J =?' = @E' F@' E@= F' A1' =' J =C@' 1CA J' ? @C?=' ?Z C @ ' ?A ' ? @?E ?>' I ' F ' =' A' < ' J = J ' AC' GA ?E' F@1' I ' <?AG ?>' F=' F@' =' GA E' AC' J >F ' < ' J = J ' AC' YGA ?E' F@C' =?1 ' =' ?>' @ < @ ' =?E' ?A ' =C ?>' GF@ F@C' F@' G=' ?Z C@E' AC' ?A ' FA > ' G FA ' =? ' ' G ' AC' D @' @ F@C' AG=CE ' F@' AG?@C' A1' F@' =? J =' AC' F@' =? J =' @ 1' =?E' G FA ' =? ' J A B@' @] @D ' F@' >C= 1 =T A?' A1' F ' AG?' E@DC=B@E' = @ ' F@' ' > ' A1' J = A ' < ?>' F@' J =C@' A? C=C ' A' F@' - :' ,' -8' 3 @ ' ' .' : ' 123 ' F ' = @' C@ = @ ' A' F@' A11@? @' A1' J = J ?>' , ' 7 = @' ?' >@?@C= ' J = ' I@' D !AD@C' A' ? CAE @' A J @' A1' F@' = @ ' = ' A' F@' J @=? ?>' A1' F= ' GACE' ?' F@' C@D@= @E' z

J6 ' 4 ' " E 6 #' 0 6 >

=' 42' 49/' ; /+' ')' ' ' 49/' 72(: 0 1+44*/' H ' ' 49/' N' 4(/2' . ' [' & F@C@' F@' DC A?@C' F=E' I@@?' A?PE @E' A?' =?' ?E J @? ' 1C=J@E' A?' F@' ' @A' ' --' 1AC' < ?>' =' J =C@' =?E' =' A ' G=' JAB@E =B@CC@E' ?' F@' ?E J @? ' A' I@' = @' G F ?' F@' J @=? ?>' A1' F@ ;' =?E' @ A?E ' F=' F@' GACE' 6 ' E E' ?A ' ?@ @ =C ? E@' AC @ ' J =C ' =?E' 4 ' ?' DDAC ' A1' F@ @4' AIZ@ A?' @B@C=' = @ ' G@C@' @E' ?' GF F' E 11@C@?' AC ' A1' =? J =' G@C@' D=C =C ' D@ 1 @E' N1 d' =?E' @B@ !=' A F@C' ?' GF F' 7 FAC @ ' H =?E' 7 FAC @ ' =?E' J =C@ ' H @@ J @E' A' I@' A? C=E ?> F@E' 1CA J' =?E' ?A ' ? E@E' ?' F@' GACE' 7 = @ HN d' = ' F@' Z E>@ ' =>C@@E' ?=? J A ' F=' = ' F@' - -' ,' - ' =C ' -' ' .' F=E' J =E@' F@' A11@? @' A1' < ?>' FAC @ ' I ' ? >F ' =' ?> @' 1@ A? ' F@' ' @A' ' - -' G=' A? ' A' I@' A? E@C@E' = ' =?' @] @? A?' A1' F= ' ;' =?E' A J @' DC@ @E@? ' A1' =D =' A?B A? ' G@C@' @E' DA?' F ' IC=? F

"(2J/' 49+4' 49/' 3 (:' 2(' +' ;+' 7+=' 12' ' ' /:' +4' 49/' 4 ; /' 79/' ' 4' 7+=' '6<(/:' +=4- ' 49/' 1*+<=/' '1*<:/=' +' #' 3 (:' 2(' +' '&+' 0/"4' 0&2(' +' #' :2 ; /=4 1' "<("2=/ $ 79 19' 1*/+(*#' / ; 3(+1/ -' +4= ' ' ' ' ID' ' ' .' ' 3' ' ..A' ' ' 210' 3<(' ' ' ' 9/' 1+=/' *+=4' (/&/((/:' 42' /' ' ')=$-' 1+=/' G' /7' .HM') J/=' 49/' (/+=2' ' &2(' "<44 ')' 49/' 12' =4(<1P 4 2' ' <"2' ' 49/' 2*:' =4+4<4/ QJ a ' 49+4' 49/' 2(:' 72<' :' 7+=' <=/:' ' ' 12' 6<9/' 4 2' ' 7 49' 49/' 249/(' 72(:=' Z =4+3q +' :' Z' 1<4 q' <4' <' :/(' 49/' =4+4<4/' 79 19' 7/' '27' 9+J/' 42' 12' =4(</' 49/(/' =' '249 ')' 42' =9/7' 49+4' 7/' +(/' '24' +4' * 3/(4#' 42' 12' =4(</' 49/' 72(:' Z' 72<' :' q +1/2(: ')' 42' 4=' 2(: '+(#' ;4/("(/4+4 2' ' 9/' ; =19 /&' 79 19' =' :2' /' 42' 49)' +' ;+' =' - 4/' +=')(/+4' +*492<-' 2' *#' :2' /' 3# 49/' 9+' :' +=' &' +' ' '=4(<;/' 4' 9+:' 3//' <=/:' 4' ; +#' "2== 3*#' 32' 49+4' 49/')<*4 2&' 49/' "(=2' /(' ; +#' '24' 3/' =2') 1+4 +=' &' 9/' 9+:' '&* 14/:' 49/' 72<' :' 3# 49/' <=/' 2&' +' ' '=4(<;/' 4? 3<4' 4' =' /T<+**# 7 49 ' ' 49/' 4/(;=' +' :' =" (4' 2&' 4* 1' =4+4<4/' +' :' 49/' 12' J 14 2' ' ; <=4' 3/ +&& (;/: 723' ' ' /*19' IA' ' ' ' ' .D W ' H' ' I' :' Y' 1' .N' A' Y' :']' 1' .I' +' :' H.' !/2' G' 2' IM' &2(' (/)<*+4 ')' 49/' =+*/' 2&' 1+44*/ " B' .G' +(' G' 1' I' W3220' 2&' (+4/=b' GG' +(' G' 1' .H' .I' !/2' G' 1' Y' .A' !/2' G' 1' HI' <4' =/1' 49/' 23=/(J+4 2' ' ' G +=4' ' 1' GG' =' .E' " ' .MDA' ! +4' 49/' +()<P ; /' 4' &(2 ;' 4* /' =4+4<4/=' .4 ' .A' !/2' G' 7 *#' *2=/' ; <19' 2&' 4=' &2(1/' &(2 ;' +:J/(4 ')' 2' 49/' " (/+ ; 3*/' 2&' 49/' & (=4 2&' 492=/' 4+4<4/=

A1" F@ = @% FA >F ?A?@ A1 @]@ A? G= % F@C@1AC@%
=>C@@E F= Z E>J@? A1 E@=F FA E I@ > B@?=>= ? F@
DC A?@C =F@ ?@] = K@ % 7C3 N!2 G@C@ = @ G F ?' F@
Z'A '7 3 A G@ @6 7,3

DA?=?L LE ?@? ?EIC F@ @A % --% GF F EF=C>@E ':/(49/
F@ DC A?@C% ?' A?@ A ?%G F J=J ?>% =?E ?' =?A F@C G F I 49p
GA ?E ?>='>@E ?>% =?E DA?' DCAA1 F=' F@ F=E J= A % =?E 72<':)'''//:'
G F=?' ? @?'' A ?Z C@ F@ DCA @ AC% EC B@?'=' ?= ? A F@ 1CA>' '24 1+<=/'+'
A1 F@ FAC @H 1AA % GF@C@I ' F@ FAC @'G=' C@?E@C@E @ @ ' A F@ 5I L[IR4
AG?@C% =?E A? ? @E A=' F@ J@A1 Fu C = % I 'G=' = @E A'
I@ <@ ' A EA G@ % =?E A I@ D@C1@ A ?E =>= ?' ?'=' FAC'
J@% =' ' @G='C@ @CB@E DA?'='EA I 'GF@ F@C% = ' F@ FAC @'G='
<@ ' A C@ A @C% =?E=' F@ GA ?E G=' ?A '=' D@C J=?@?' ?Z C %
FK A11@? @G='G F ?' F@ = @;' I ' F@Z E>@ ' F@ E F@ A?T
B A?'C>F % =?E A? E@C@E F@ GACE 7GA ?E H ?' F@ ' @A L A'
I@ @E=' A? C=E ?> F@E 1CAJ'='D@CJ=?@?' ?Z C % F'=
J=J ?>% NJd F@ = @ ?' F@ DC@ @?' '=DD@=C ' A'=EJ 'A1
=' J =C A? C A?'L

DA?'=?' ?E J@?' 1AC J=J ?>'=' FAC @% 'G=' DCAB@E F=' 9/(/" "+(4 2&
F@ DC A?@C G=' FCAG?' I ' F@ FAC @% =?E EC=>>@E AJ@E =? @
=A?>' F@ >CA ?E% =?E F=' F@ DC A?@C >A ' D' =?E' = E FA E A1 42(" "2&& ('
F@ A?> @ A1 F@ FAC @% ='D=C ' A1 GF F G=' @1 ?' F ' F=?E% 7+=' 9/*:' 49+4
GF F F@ FC@G' =G=' F@C@ G=' ?A' @B E@? @ A F@G' F=' F@
DC A?@C @E' =? ? C J@? % ?AC G=' '=' = ' F@G?' ?' GF=' ;+ ; ')'
G=' F ' DAC A?' A1 F@ A?> @ F=E I@@?' @D=C= @E 1CAJ F@ C@ T
E @% I ' J >F ' DA I 'F=B@ I@@?' EA?@ I ' I@ A?> @ I@ ?>'
EC=G?' =>= ? ' =' F=CD AA F% GF F F@ FAC @ F=E ' F@ GA ?E
F=E F@= @E% =?E F@ FAC @ G=' =I @ A GAC<' = ' G@ ' = ' I@1AC@% F@
A? ?Z C ' C@ ?>' 1CAJ F@ A ' A1 F@ DA ? ' A1 F@ A?> @
I@?>% F=' 4 A E?A '@=' AC?' b @ A1= '=' I@1AC@ & >F '
J=?% % F=B ?>' A? @E 5= @ A?% % F@ E F=' F@C@ G=' ?A
F D@CJ=?@?' ?Z C ' ?1 @E A?' @FAC @'=' GA E DDAC' F@
F=C>@ A1 J=J ?>% 1 3

F@ GA 1C L A ? F=C>@E F@ DC A?@C G F F=B ?>' ? =G ' 2 ; ')'+1 :'
1 % 1@A? A % =?E J= A '< @E F@ J=C@% =>= ? ' F@ 1AC J'
A1 F@ = @' F@ 1C % = ?>' F@ J@=? ' @E I ' F@ DC A?@C 49/(/3# 3* +: '
1AC F='D CDA @% ?=J@ % F@ DA C ?>'? CA '= E ? A F@ @1 '@=C ?> ' [='
A1 F@ J=C@% =?E= A = ?>'=' ='1= ' F=' F@ DC A?@C F@C@I '
< @E F@ J=C@% =?E F@ @ A?E A ? % J@C@ ' = ?>'=' ='1= ' =4+4<4/'
F=' F@ DC A?@C < @E F@ J=C@ ; F@ F CE A ?' F=C>@E F@
DC A?@C G F F=B ?>' ? =G1 % 1@A? A % =?E J= A %
J=J @E F@ J=C@% =>= ? ' F@ 1AC J' A1 F@ = @ ; =?E F@ 1A C F
A ?' F=C>@E F@ DC A?@C G F F=B ?>' ? =G1 % 1@A? A %
=?E J= A ' GA ?E@E F@ J=C@% =>= ? ' F@ 1AC J' A1 F@
= @ ' G=' DCAB@E% F=' F@ DC A?@C E E DA C =' b =? ' A1
? CA ' = E% GF F F@ F=E FAC ' I@1AC@ D C F= @E% ? A F@
J=C@H @1 '@=C ; =?E F='F@ F=E @ F@C= A DA C@E AJ@A1 ' ? A

" B +4##S 1+=/' G *+10 /"' DG.' +'.' ' ' ! ' ' H
. /+19' DG' G +=4' ' '1' GG'=' .E' " B +#722:S 1+=/' G +=4' ' '1'GG'
"' .MDI' 244S 1+=/' . /+19' DH' '24/ =' GM' "' .MDY' ' ' ' .Y
R B' 2#*/S 1+=/' ' <**/(' ' G W 4B /)' ' /+'=' . ' ' ' AHN'
+=4' ' '1' GG'=' .E' "' .MDY 9/(/ 7+= +*=2 +' 12<'4 &2(72<': ')'
":B /V ,' 9+"" /' ' +#*/#' '9<4 4 7+= +: ; 44/:' 49+4 49 = 7+= '24
+'.' ' ' DD "(2J/:' +=' '2 '=4(<; /'4 7+=<=/:
WDB /V ,' 9 4'/#' ' +#*/6'

8 'X 3' 'W 3' ' 12 3'.<&

F@' @1 ' @ @%' AC%' G = ' G= ' J AC@' DCA I=I @%' F= ' AJ@' A1' F@' = 1E%' GF F' I@' F=E' DA C@E' ? A' F@' @=C%' F=E' C ?' = A?>' =' 1 CCAG' GF1F' ' F=E' J =E@' 1CA J ' F@C' @1 ' @=C' DA?' F@C' @1 ' @ J D @%' =?E' A' ? A' F@C' @1 ' @ @%' =?E' F= ' F@' F=E' F@C@ I ' AA = A?@E' F@' J J @E = @' I ?ET ?@ ' A1' F= ' @ @' F@' J =C@' A? ? @E' A' B@%' ?' @] C@ J @' D= ?%' = I A ' @?' E= %' GF@?%' ?' ACE@C' A' D ' F@C' A ' A1' F@C' J @C %' F@ G= ' <' G F' =' <? 1@%' =?E' I @E' A' E@= F ' GA' C>@A? ' = @E%' F= ' F@' ?Z C @ ' GF F' G@C@' EA?@' A' F@' @=C' NGF F' G= ' DCAE @Ed G@C@' ?A ' GA ?E ' I ' @C %' FA >F' F' @C ' GA 5E' F=B@' C?@E' A' GA ?E ' DA?' F ' = @' A1' 1= %' @' ? CA ' = E' ?A ' F=B ?>' I@@?' F@' DCA] J = @' =?E' J J @E = @' = @' A1' F@' E@= F' A1' F@' J=C@%' =?E' F@' C>@A? ' F=B ?>' E@DA @E' F= ' F@' ? CAe ' = '' F=E' ?A' DCAE @E' GF= ' F@ ' A E' @ F? = ' = ' GJ ?E %' F@' A C' C@T AJ J@?E@E' F@' Z C %' 1' F@ ' G@C@' = 1@E' A1' Fu' > ' A1' F@ DC A?@C%' A' 1 ?E' F@ C' B@CE ' =>= ? ' F J' A?' F@' F CE' A ?' A1' F@' ?E J@? %' =?E' A' = b ' F J' A?' F@' A F@C' A ? ';' F@' Z C ' F=B ?>' 1A ?E' =' B@CE ' = ACE ?> %' =' = @' G= ' C@ @CB@E' DA?' F@ b @ A?' GF@ F@C' F@' ?Z C ' EA?@' A' F@' @ @' A1' F@' J=C@' ?' F@ J =??@C' =?E' I ' F@' J @=? ' =IAB@' = @E' G= ' =' J= J ?>' G F ?' F@' J @=? ?>' A1' F@' .' ,' 9' @A' :%' ' %' ' ';' =?E' F@' A?B A?' G= ' =11 C J @E%' NAd

2<' :=' 'P &* 14/ :' 3# +' :2)' =/4 +4 +' =9//"

F@' DC A?@C' G= ' ?E @E' ?E@C' F@' :' @A' :%' ' 8: ' ' -%' 1AC 1@ A? A ' GA ?E ?>' =' F@@D%' =?E' ' =DD@=C@E' F= ' F@' F=E' @' =' EA>' = ' F@' F@@D%' =?E' F= ' F@' EA>%' I ' I ?>' %' ?1 @E' @B@C=' @B@C@' GA ?E ' 5=C<%' ' ' %' 7 F ' ' ?A ' =?' A11@? @' = ' AJ JA?' =G%' =?E' ' A? ' J =E@' A' I ' = @';' =?E' ' = J ' A1' AD ? A?' F=' ?Z C ?>' =' F@@D' I ' @ ?>' =' EA>' A' GACC ' %' ' ?A ' ' J= J ?>' AC GA ?E ?>' G F ?' F@' J @=? ?>' A1' F@' = @ H NDd

<(' ')' +' 3< * : .')' 7 49' +' 127' .'' 4

1' =' D@C A?' J = A ' @ ' 1 C@' A' =' I E ?>' ?' GF F' =' AG G= %' =?E' F@' AG' G= ' I C? ' A' E@= F' I ' F@' 1 C@%' F G= ' =' < ?>' G F ?' F@' .' ,' 9' @A' :%' ' 9 %' ' ' ROB

W '+)+ '=4 49/' 27 '/(' '24 +11/==+(#

?E@C' F@' C@D@= @E' = @4A1' F@' ' @A' %' ' --%' & 6 ! ' =>= ? ' F@' AG?@C' A1' F@' = @' G= ' =' ?@ @ =C ' < >C@E @?' A' A? @' F@ A11@? @' F@C@' @ @= @E%' =?E' ? J @CA ' E@ A? ' AA<%' D = @' = ' A' F@ ?= C@' =?E' DCAA1' A1' F ' J = @%' A' GF F' ' ' ??@ @ =C ' A' C@1@C%' = ' ?E@C' F@' = @' = @' F@' A11@? @' G ' I@' AJ D @ @%' GF@ F@C' ' I@' AJ J @E' 1CA J ' J = @' A? @ B@E' =>= ? ' F@' AG?@C%' AC T4 < ! j' Nad

?' F@' C = ' A1' =?' ?E J @? ' ?E@C' F@' .' ,' 9' @A' :%' ' % ' %' 1AC' ? =G1 ' =?E' J = A ' GA ?E ?>' = @%' ' G= ' ?A' ?@ @ =C ' A' F@G' D@C A?= ' J = @' =>= ? ' F@' AG?@C' A1' F@' DCAT D@C ' ' G= ' @?A >F' F= ' F@C@' G= ' =' J F @BA ' J A B@%' FA >F' ?A ' D=C =C' J = @' AG=CE ' F@' AG?@C%' N d

' : 14 ; / '4 +' :' /J' : / '1/

' FA E' @@ J' F= ' F@' ?E J @? ' DA?' F@' DC@ @?' = @' A >F %' <@' =?' ?E J @? ! DA?' F@' C@D@= @E' = @' A1' F@' ' @A' % ' 8-%' A' D@ 1 ' F@' < ?E' A1' = @' ?Z C@E%' =?E' F= ' F' = @

W2b /V' ,' 7/'=' ' ' ' ' M ' ' GMA' //' / ' ' <((27' ' ' ' ' ' ' IAY' J2*' .
1E3' /V' ,' <)9/=' G' ' ' ' IGM' <4'=//' * ; =*/#$=1+=/' G' /7' .GY' 79/(/' *: /(=2' ' ' FA >F' +' 72<' :' '&* 14/ :' 3#' 4* /' 3 4/' 2& +' :2)' 7+=' +' 72<' :' 7 49 '' 49/' N ! /2' I' ' ' 3<4' '4/' : /' :' 42' (/' =/ 7/' 49/' "2 '4 &' ' 3/1+ ; /' '/1/==+(#

=' 42' 79+4' '6<(/=' 12 '=4 4<4/' 72<' :=' =//' J2*' .' "' NGM' ' O' ' ' ! W) b /V' ,' +<)942' ' A' ' ' ' AAN' W(b /1' AE' ' ' "' ENG % b *=2' $=' 1+=/' .' /7' GGY' /)' J' J/#' .' /' ' YH' :' ' ' ' ' DMI' :/ 1 : /' :' <' : /('49/' +32J/' :*+4<4/' + ' :' :' /4' 1' NM' =' G

@? J I@ DDAC @E I F@ @B E@? @ ?=?=?E J @? DA?
@ @A % --% F@ DC A?@C G= F=C>@E G F J= A
< ?>= @C = ?= = @% B K % =J =C@% =?E F@ G= A?B @E% I DA?
C@ 'CC ?>= A F@ @B E@? @% % E E ?A =DD@=C F= F@C@ G= =? =
@B E@? @ A @ @] A1 Fu4=? J = < @E = @ I @ ?>=C@ @CB@E%
F@ 1 C b @ A?= A? E@C@E G= % GF@ F@C F@ = @>= A?= F= F@
DC A?@C < @E @C = ?= = @% G FA D@ 1 ?>=GF= % GA E F=B@
I@@?= 11 @?% I@ = @ F@?= GF= G= = @E ?E@C F@ B E@T
@ J >F 11@ C@Z@ @E G '?E F@ Z E>@ FA >F F= GA E
?A F=B@ I@@?= 11 @? % =?E! F@ G@C@ @=C F= G= @ @? =
F= AJ@ @B E@? @ FA E F=B@ I@@?= > B@?= F= F@ =? J = G= =
J =C@% 1

F@ DC A?@C G= ?E @E 1AC =J E@J @=?AC ?=E J ? @C ?>= A F@C +14=2&
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=?E =DD@=C@E F= F@ DC A?@C J]@E DF C = E G F = "2 =2 '' +(/
b =? A1 AC?% =?E F= % F=B ?>EA?@ A% F@ >=B@ @= F FAC @ F +: ; == 3/ 42 =9/7 49/ P
1@@E% = F@ FAC @ I@ ?>= ?= F@ =J@ =I @ DF C = E 4/ 4
AJ@ J@ > B@?= A zZAC @ I >CAAJ % ?E@C =?= E@=F= G
J =<@ F@ C A= F ?@ 5=C<% F F% F@ E F= @B@C= = A1
=EJ ? @C ?>= DF C = E G@C@ =EJ I @% = F@ J >F >A A
F@G GF@ F@C G= EA?@ G F F@ ? @? F=C>@E ?= F@ ?E T
J @? ;=?E F@ @1 A F@ Z C A = % GF@ F@C F@ DC A?@C F=E
=EJ ? @C@E F@ DA A?= G F F@ ? @? J D @E ?= F@ ?E T
J @? % AC GF@ F@C F@ F=E EA?@ ?E@C F@ J DC@ A?= F=
GA E J DCAB@ F@ =DD@=C=? @ A1 F@ FAC @ ; 1AC F= ?= F@ = @C
= @ F@ A >F A = b F J 1>3

B@C DC ? D= ?= F@ @ A?E E@>C@@% =?E @B@C = @ AC I@T (b+*= *
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F@ 1 C E@>C@@% =?E @B@C = @ AC =1 @C F@ 1= = I @ A Ib
J DC A?@E 1AC =? J @ ?A @] @@E ?>= GA @=C % N d
F@ -) -% J =<@ =? D@C A?= C @ F@= ?>= AC
A F@CG @ C@= ?>= =? = @% N8 % AC J DCAD@C EC B ?>= F@
=J @% =I @ A I@ J J =C A?B @E% 153

R'B /V ,' 9+*O*/#' W#B ' 1 " ' ENA' 79/(/ 49/ 249/(
W]B /V ,' 2)) I HYI 9/)/ '/(+# "(2J = 2 ' 2 49/ 14 +(/ =4+4/ :
/+(' / :'6<:)/ +=2 9/* :' 49+4 49/ /J : / '1/ "NB ' :' =// 49/ .D .E /4 2' YM
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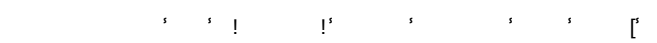

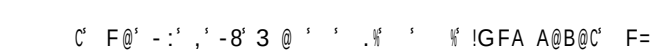

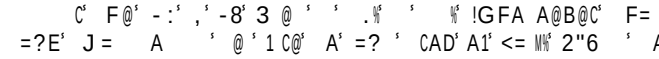

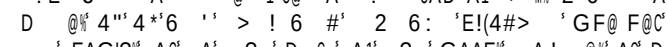

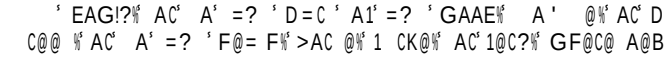

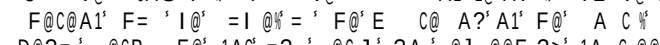

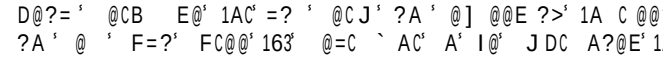

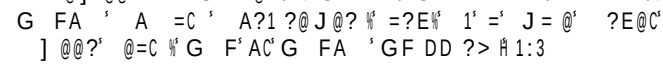

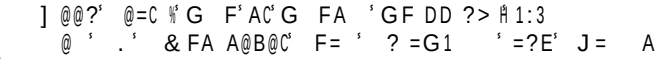

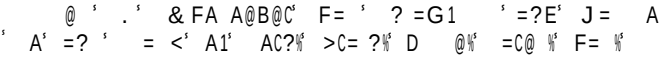

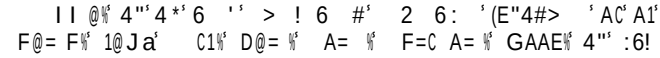

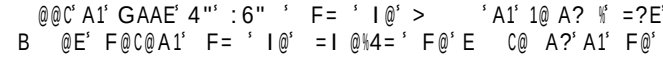

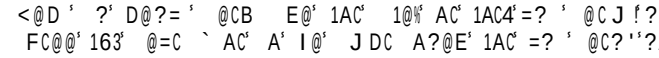

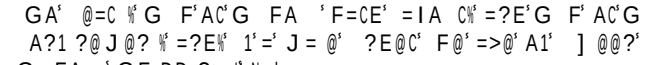

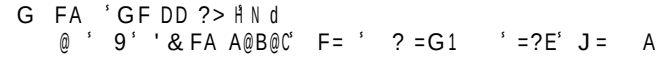

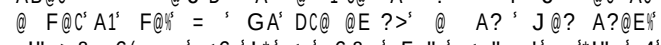

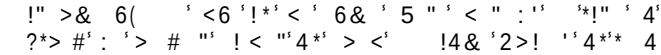

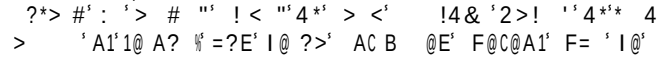

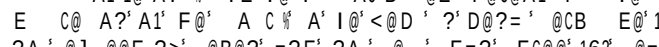

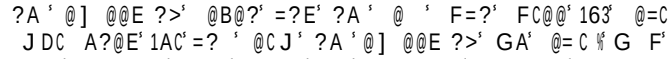

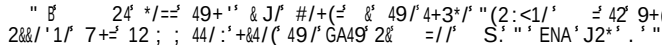

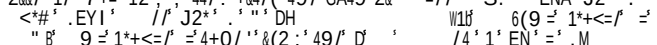

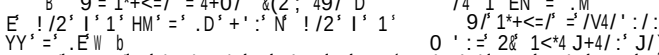

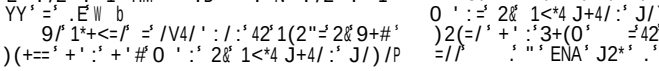

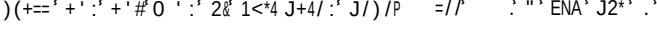

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1F DD ?> H N W
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= C@=E I@@?@ ? @C @E=?E G 11 @ A = @ F@ DA ? E@ E@E
I F@ J ?L F D = @
Y = <A1 A= @@E C=G =?E GF@= I I @ AC F= J = ?A +=/ +42
= = <A1 C=G 1 3 A = = <A JDA @E A1 @E>@ =?E C F@ =4+10 2
=4(+7
F@ DCAE @ A1 F@ 1@? ? A = = <A1 C=G ; 1AC C=G ?
= =?E Q = = @D = 'a? J @=? F@ =G A1 GF@= I=C @
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C=G G F I I @ = E A?@ F@ AD A DC@B@? AG ?> =G=
= = =N'' A1 1=G 1s;3 b = ? A1 C=G D= <@E A?@ = ACC ?
A C @ A1 C=? J A?@ A J =C<@ =?E @1 1AC F@ ? >F ?@ F@ =CE
A1 =?@ ??= FA = = = <A1 C=G G F ?@ F@ J @=? ?>A1 F@ =IAB@
. F @ A?= 1<3
F@ Z E>@ G =<@ Z E = ?A @ F= I @=? =C@ 7D @= H 11 3 +=/ +42
=?E F= I =C @ AC?@ AC >C= ?= 1D3 =?E F@C@1AC@ ?E J @? = [=?E
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? @? A ?Z C@= 1E 3

" B 9 1*+<=/ 4+0/''&(2 ;'49/ N .M /4' M' GA' =' D' 42 49/ 72(: '
4+* 1 =/ 49/ '24/ 42 =/1' D' '" NMH'
42 9+(:'*+32<(' 1 '=// 6 '" ENA'
J2*' '" "" EM' E.
W/ /V , 244/'9+ ; ' :1 ' 6 '" N.Y
Ww /) , +*:210' G 2V' AA' 6 '" N.Y
38 /V , /7 IAE ' 6 '" N.D
7<3' , +4197/**' IG YH' ' G' M' G.
W /V 22:7+(: ' HGH' 6 '" NG.

"*B /V 7+40 '=' I' AIE' 4! '" NG.
W2 /) , "/'1/(' * GY'] ' .Y' 6 '" N.Y
" B /V (=' Y' HIE' "N.Y
W ; b /) b' <'=2''G 2V' .EY' 6 '" N.A
" B /) , +J# .' 2V' YM' 6 '" NG.
W2 /V 22:7+(: ' HGH' 6 '" NGI
W" b /V 22:7+(: ' M' HGH' 6 '" NG.

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1NN # ‘ 2& 49/‘ 0 ' :‘ ; / ' 4 2 ' / :‘ ''‘ 49/‘ 4 4*/‘ 42‘ ?9=‘ 19+"4/(‘ 7/(/‘ 4(/+4/ :‘ 2 '*#‘ +=‘ 4(/="+==/=‘ +' :‘ ; =: / ; /+ '2(=‘ 9#‘ =/J/(&‘ +' 1 / '4‘ =4+4<4/=ﬡ 49/#‘ 7/(/‘ +&4/(7+(:=‘ ; +: /‘ 2&&/ '1/=‘ 2& 49/‘ : /)(/ /‘ 2& &/*2 ' #? 3<4‘ +*‘ 49/‘ &2(; /(‘ =4+4<4/=‘ <"2 ''‘ 49 =‘ =<36/14‘ +(/‘ (/"/+*/ :

/=4(2# ')‘ 2(‘ :+ ; +) ')‘ 4(//=' =9(<3=‘ 1 ‘ 42‘ 49/‘ ‘ J+*</‘ 2& ; 2(/‘ 49+ ''‘ .^‘)(27 ')‘ ''‘ +‘ "*/+=< / ‘) [2<' :‘ 1

‘ F@‘ - :‘ ,‘ -8‘ 3 @ ‘ ‘ .%‘ ‘ - %‘ 7GFA A@B@C‘ F= ‘ ? =G1 ‘ =?E‘ J = A ‘ %‘ IC@=<%‘ I=C<%‘ CAA ‘ D%‘ AC‘ A F@CG @‘ E@ CA ‘ AC‘ E=J =>@‘ F@‘ GFA @‘ AC‘ =? ‘ D=C ‘ A1‘ =? ‘ C@@%‘ =D ?>%‘ AC‘ FC I%‘ AC‘ =? ‘ ?E@CGAAE%‘ >CAG ?>‘ ?‘ =? ‘ D=C<%‘ D @= C@ >CA ?E%‘ >=CE@?%‘ AC F=CE%‘ AC‘ =B@? @%‘ AC‘ ?‘ =? ‘ >CA ?E‘ =EZA ? ?>‘ AC‘ I@ A?> ?>‘ A‘ =? ‘ EG@ ?> FA @‘ N ?‘ = @‘ F@‘ =J A ? ‘ A1‘ F@‘ ?Z C ‘ EA?@‘ F= ‘ @] @@E‘ F@‘ J ‘ A1‘ A?@‘ DA ?Ed%‘ F= ‘ I@‘ > ‘ A1‘ 1@ A? % =?E‘ I@ D>‘ A?B @E‘ F@C@A1‘ F= ‘ I@‘ =I @%‘ = ‘ F@‘ E @ C@ A?‘ A1‘ F@‘ A C %‘ A‘ I@‘ <@D ‘ ?‘ D@?= ‘ @CB E@‘ 1AC‘ F@‘ @C J ‘ A1‘ FC@@‘ N=d‘ @=C `‘ A ‘ A‘ I@‘ J DC A?@E‘ 1AC‘ =? ‘ @C J ‘ ?A ‘ @] @@E ?>‘ GA‘ @=C %‘ G F‘ AC‘ G FA ‘ F=CE‘ =IA C%‘ ??E‘ G F‘ AC‘ G FA ‘ A =C ‘ A?1 ?@J@?%‘ =?E%‘ 1‘ =‘ J = @‘ ?E@C‘ F@‘ =>@‘ A1‘] @@?‘ @=C %‘ G F‘ AC‘ G FA ‘ GF DD ?> H 1:3‘ 4

/=4(2# ')‘ 2(‘ :+ ; +) ')‘ 4(//=' =9(<3=‘ 1 ‘ 42‘ 49/‘ J+*</‘ 2& ; 2(/‘ 49+ ''‘ A^ ‘)(27 ')‘ /*=/[‘ 79/(/‘ 49+ ''‘ +‘ "*/+=<(/ ‘)(2<' :‘ ‘ 1

@ ‘ - ‘ 7 & FA A@B@C‘ F= ''‘ ? =G1 ‘ =?E‘ J = A ‘ % IC@=<%‘ I=C<%‘ AA ‘ D%‘ AC‘ A F@CG @‘ E@ HA ‘ AC‘ E=J =>@‘ F@‘ GFA @‘ AC‘ =? ‘ D=C ‘ A1‘ =? ‘ C@@%‘ =D ?>%‘ AC‘ FC I%‘ A ‘ =? ‘ ?E@CGAAE%‘ >CAGT ?>‘ @ @GF@C@‘ F=?‘ ?‘ =? ‘ D=C<%‘ D @= C@ >CA ?E%‘ >=1E@?%‘ AC F=CE%‘ AC‘ =B@? @%‘ AC‘ ?‘ =? ‘ >CA ?E‘ =EZA ? ?>‘ A‘ AC‘ I@ A?> ?>‘ A‘ =? ‘ EG@ ?> FA @‘ N ?‘ = @‘ F@‘ =J A ? ‘ A1‘ ?Z C ‘ EA?@‘ F= ‘ @] @@E‘ F@‘ J ‘ A1‘ 1 B@‘ DA ?E d%‘ F= ‘ I@‘ > ‘ A1‘ 1@ A? %‘ =?E‘ I@ ?>‘ A?T B @E‘ F@C@A1‘ F= ‘ I@‘ =I @%‘ = ‘ F@‘ E C@ A?‘ A1‘ F@‘ A C %‘ A‘ I@ <@D ‘ ?‘ D@?= ‘ @CB E@‘ 1AC‘ F@‘ @C J ‘ A1‘ FC@@‘ 163‘ @=C ` AC‘ A‘ 3/ J DC A?@E‘ 1AC‘ =? ‘ @C J ‘ ?A ‘ @] @@E ?>‘ GA‘ @=C %‘ G F‘ AC‘ G FT A ‘ F=CE‘ =IA C%‘ =?E‘ G F‘ AC‘ G FA ‘ A =C ‘ A?1 ?@J@?%‘ =?E%‘ 1‘ ' ‘ J = @‘ ?E@C‘ F@‘ =>@‘ A1‘] @@?‘ @=C %‘ G F ‘ AC‘ G FA ‘ GF DD ?> H N d

+ ; +) ')‘ 4(//=' 79/(/=2[‘ /J/(‘)(27 ')‘ 42‘ 49/ '+ ; 2<' 4‘ 2& S

@ ‘ - - ‘ 7 & FA A@B@C‘ F= ‘ ? =G1 ‘ =?E‘ J = A ‘ % IC@=<%‘ I=C<%‘ CAA ‘ D%‘ AC‘ A F@CG @‘ E@ CA ‘ AC‘ E=J =>@‘ F@‘ GFA @‘ AC‘ =? ‘ D=C ‘ A1‘ =? ‘ C@@%‘ =D ?>%‘ AC‘ FC I%‘ AC‘ =? ‘ ?E@CGAAE%‘ GF@C@T A@B@C‘ F@‘ =J @‘ J = ‘ I@‘ >CAG ?>%‘ F@‘ ?Z C ‘ EA?@‘ I@ ?>‘ A‘ F@‘ =J A ? ‘ A1‘ A?@‘ F ?>‘ = ‘ F@‘ @= %‘ F= %‘ A?‘ A?B A?‘ F@C@A1

" B‘ L J/‘ #/+(=‘ &‘ 49/‘ 2&&/ '1/‘ 7+=‘ 12 ; P ; 44/ :‘ +&4/(‘ 49/‘ GA49‘ 2& <*#‘ .EY!‘ //‘ J2*‘ .‘ "‘ DH‘ " B‘ 9=‘ 1*+<=/‘ =‘ 4+O/ ''‘ &(2 ;‘ 49/‘ D‘ ‘ E‘ ! /2‘ ‘ 1‘ HM‘ =‘ .N‘ +' :‘ =‘ /V4/ ' : /:‘ 42‘ (/*+ :‘ ‘ 9/‘ N‘ ! /2‘ I‘ 1‘ AY‘ =‘ .N W b‘ "(2J :/ :‘ &2(‘ = ; *+(‘ 2&&/ '1/=‘ =‘ 42‘ 9+(: *+32<(‘ 1 ‘ =//‘ 6 ‘ "‘ ‘ ENA‘ J2*‘ .‘ "" ‘ EM‘ E. W1‘ 9=‘ 1*+<=/‘ =‘ 4+O/ ''‘ &(2 ;‘ 49/‘ D‘ ‘ E‘ ! /2‘ I‘ M‘ HM‘ =‘ .N‘ / N ! /2‘ I‘ 1‘ AY‘ =‘ .N W b‘ 7+=‘ = ; *+(‘ +=‘ 42‘ 49/‘ :+# 4 ; / ‘ =‘ 42‘ 9+(:‘ *+32<(‘ 1 ‘ =//‘ :‘ "‘ ‘ ENA‘ J2*‘ .‘ "" ‘ EM‘ E.

I@1AC@ =Z @ A1 F@ D@= @ = F@ E C@ A?A1 F@Z @ @ F@C
I9 AJJ @E A F@ AJJA?>=A AC FA @ @1 ACC@ A? F@C@
A I@ JDC A?@E A? AC A I@ JDC A?@E =?E <@D A F=CE
=IA C 1AC =? @ !J ?A @] @@E ?> FC@@ JA? F AC @ @ F=
1AC1@ =?EHD AB@C =?E =IAB@ F@ =JA ? A1 F@ ?Z C EA?@
F J A1 JA?@ ?A @] @@E ?> 1B@ DA ?E = A F@Z @
F= @@J J @@ ; =?E GFA A@B@C F=B ?> I@@?' A?B @E A1 =? /12' :
F A11@? @ ! < "=>= ? F 4"6 '*4" & " A1 5=C =J @? 2&&/'1/
F= =1 @CG=CE AJJ L? A1 F@ =E'A11@? @ ?' F @ A?'
I@1AC@ J@? A?@E =?E' F= I@ A?B @E F@C@A1 ?' <@ J=??@C
F= 1AC F @ A?E A11@? @ I@ AJJ @E A F@ AJJA?' >=A AC
FA @A1 IACC@ A? F@C@ A I@ <@D A F=CE =IA C 1AC F @CJ
?A @] @@E ?> G@ B@ JA? F = F@ A?B ?>Z @ F= ? F ?<
1 1; =?E GFA A@B@C F=B ?> I@@?' G @ A?B @E A1 =? F 9 (: 2&&/'1/
A11@? @ 75< < ": 4 <4" ! < "4 6* " < E6 ! 2 4* <! B 3 = =1 @CG=CE
AJJ =? A1 F@ = E A11@? @ ?' F @ A?' I@1AC@ J@? A?@E
F= I@ > A1 =J E@J@=?AC =?E' I@ ?> A?B @E' F@C@A1 F=
I@ =I @ = F@ E C@ A?A1 F@ A C A I@ JDC A?@E 1AC =?
@CJ ?A @] @@E ?> GA @=C G F AC G FA F=CE =IA C =?E
G F AC G FA A =C A?1 ?@J@? =?E 1' =J = @ ?E@C F@ =>@
A1] @@?' @=C G F AC G FA GF DD ?> H 7#3
F@ GACE A1 F = @ =C@ J F =C>@C F=?' F@ GACE A1 F@
@A --- GF F G@C@ ! ? =G1 =?E' J= A
EAG?' AC A F@CG @ E@ CA =? C@@ H DA?' F = @ G=
F@ E F= ?>' EAG?' =DD @' C@@ G= 11 @? = FA >F' F@
C@@ G@C@ ?A F@C@I A = E@ CA @E N@d
F@ DC A?@C G= ?E @E' ?E@C F@ .' , 9 @A : 9/(/ 4(//=
1AC 1@ A? A ?Z C ?>' A?@ = F' C@@ A?@ @ J' C@@ =?E' FAC?' +(/ '6<(/ :' 49/ 12 '=/P
FC I >CAG ?>' ?' =' @C = ?' F@E>@ F@C@I EA ?>' ?Z C A' =?' T</ '4 +# +
=JA ?' @] @@E ?>' 8V =?E' =DD@=C@E' F= F@' ?Z C A' F@' 6<(# 1+' '2 3/
C@@ ' =JA ? @E' A' _ ; I ' GA 1E' I@' ?@ @ =C A' I' D' F@' '1*<: / :' =2 +=' 42 3(') 49/
AE' F@E>@' =?E' C@D =? ; =?E' F@' II ?>% b <GAAE @ ?>% 1+=/ 7 49 '' 42 3(') 49/
=?E' @=? ?>% '?E' DA =?E' C= A' DCA @ F@' ?@G' F@E>@% GA E' 49/ =4+4<4/
A :V' :=' E' G= AIZ@ @E' F= ' = F@' ?Z C J I@' EA?@'
?' C@ D@ A1 >CAG ?>' C@@ F@C@' G= ?A' @B E@? @' A1 F' ?Z C
I@ A?E' A?@' DA ?E' ; =?E% DA?' =' = @' C@ @CB@E% G= F@ E' F= '
F@' A?B A?' G= GCA?>% 1AC G= ?A 11 @? F= F@' 4 0
> !6 ?Z C FA E' C= @' F@' = JA ? A1' ?Z C A' N Md
?' A?@' = @' N@d G= = A' F@ E' F= F@' = J I@' EA?@' 1CA J' +* 1/
J= @' A' F@' AG?@C% I F ?A' A?>@C' ?@ @ =C % "3B
?' ?E J@? 1AC E=J => ?>' =DD @' C@@ ' >CAG ?>' ?' =' >=CE@?' 0 '*+7&<**#
FA E' = @' F@' E=J =>@' A' I@' EA?@' 7 ? =G1 =?E' J= A %H +' :' ; +P
=?E' ' ?A 11 @? ' A' = @' F= ' G= EA?@' ! 1@ A? A H 1<3 * 1 2<=*#$
@@J ' F= ' F@C@' J >F I@' = @ ?' GF F' =' D=C J >F ' ' : 14 ; / '4
AJ@' G F ?' F@' .' , 9' @A : 9 ' ' FA >F' F@' C@@' 4/ '+'4
1+44 ')' 4(//=

W:0 9 1*+<=/ =' 4+0/ '' &(2 ;' 49/ D '
E ! /2' .' 1' HM =' GM' +' :' =' /V4/ ' : / :' 42'
(/*+' :' 9/(/ 7+= +' = ; *+(1*+<=/ ' 3<4'
12'& ' /:' 42' :+ ; +)/ :2' / 3/47 / / '' =<' P
(=/ +' :' =<' =/4' '' 49/ . I' ' .A' /4' 1'
NG =' H W b' 4= 42'9+(:' *+32<(' ' =//'
:' " ' ENA' J2*' .' " " ' EM' E.
W/0 /V , +#*2(' ' ' HDH

W w b' /) ' , ' 9 4/ ; +' ' /+(=' '
HAH
" B //' /1' AE' 2& 49/' ' /7' 14' .'
" ' ENG
W 0 /V' ' /7 =' ! *2<1/=4/(; '
==' . EHM' 2=+' T<4' ' ' ' ' ' ' '
//' /V &' <(' /(' ' ' ' ' ' ' '
GHN' .' " ' N . N

8 % * 3 @ 5 3 $% & J

G@C@ >CAG ?> DA?= ?E ?F A D= A?= @?=? " B ?E
EA I A?F I Z@ C@JAB@E I @ 8 A1 F@?@G GF
G= ? CAE @E A J@@ F =?E A F@C <@= @ 1C3

/+ ')2&
4(/= "*+'4=
+:62 ' ')

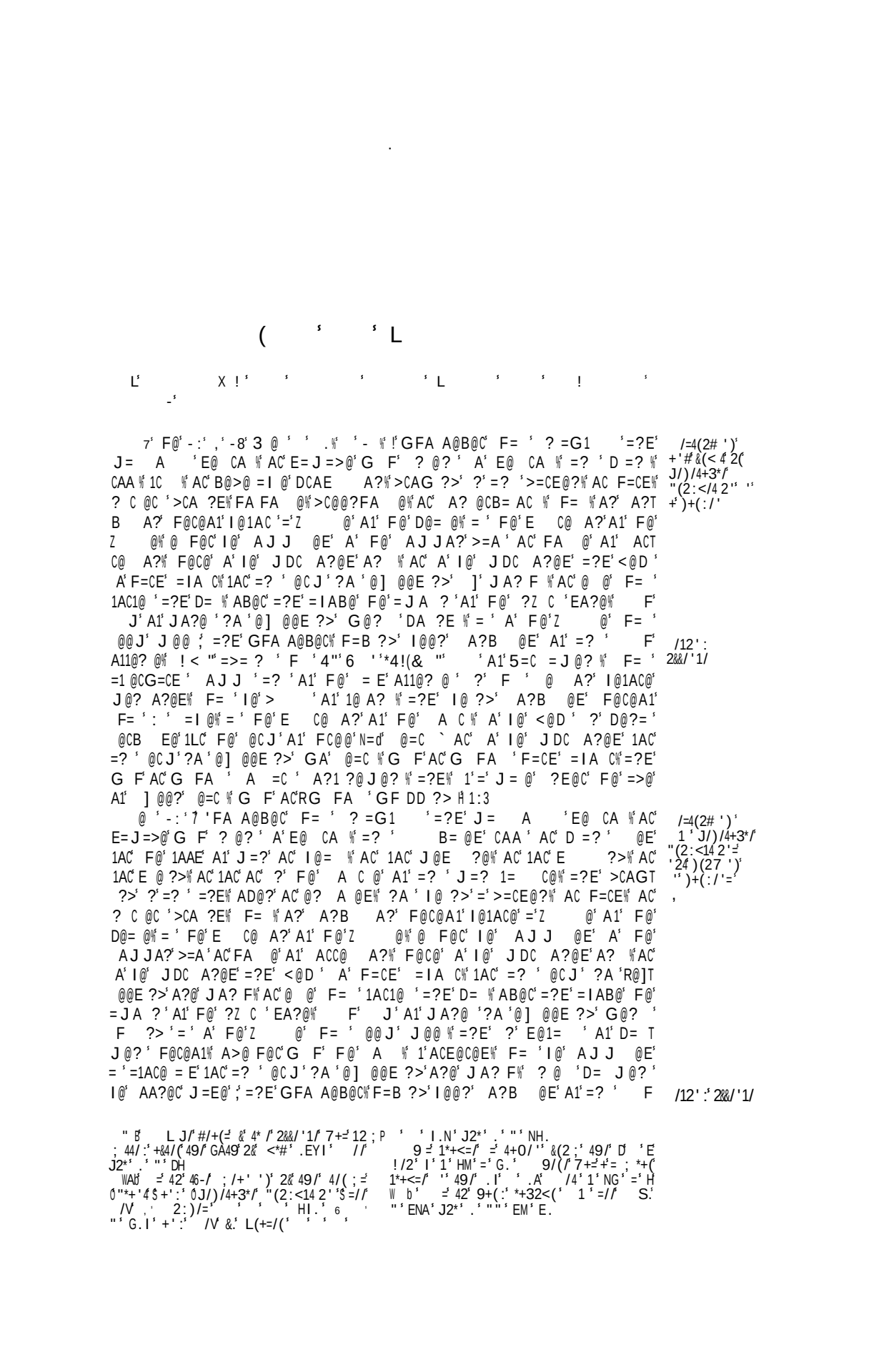
F=B@ @@?= F= G= F@ E F= A ?> D@=C C@@ =IA
@B@?1@@ F >F G@C@7 C@@ H G F ?4 F@ J @=? ?>A1 F@ . ,9
@A :% - % 9% =?E ?A 7D =? H G F ?@ : -A1 F= ;
=?E F= F@GACE7=EZA ? ?>H ?F@1ACJ@C @ A?E@?A @E =?E
=I A @ A? > A =?E G FA =? F ?> ? @CB@ Z ?>% =?E A? C@1@CC@E A F@GACE7EG@ ?> FA @ H Nqd

('/ "-= '
=/12' : :/)(//

F@ = @ = A A?1= ? DCAB A? = A DC ? D= ?F@
@ A?E E@>C@@% = A = @ AC @ % =?E = A =I@ AC ? ?F J E@T
J@=?AC 1X3

F@ E@ C A?A1 = GAAE% ADD @% , % I 1C@ ' I@@?J@?T
A?@E ?= 1ACJ@C F=D @C% " B

W[**= , 2**/44 Y) EA : " G.I
"#B J .: " ENI "B J +: " ENA
W b /V , 2:)/= H I. " B J .: " NHG



NHE 8 '@ 5 3.' .' .' 6 .' ^ .' ' $ % &'

A11@? @% ! < "' =>= ? ' F '4"' 6 ''*4"& "' 'A1' 5=C =J@? %' F= '
=1 @CG=CE ' AJ J '=? 'A1' F@' = E' A11@? @ ' ?' F ' @ A?' I@1A "'
J@? A?@E% =?E' F= 'I@' A?B @E' F@C@A1' ?' <@' J=??@C% F= 'I@'
AJ J @E' A' F@' AJ JA?' >=A 'AC' FA @' A1' ACC@ A?% F@C@' A'RI@'
<@D ' A' F=CE' =IA C' 1AC' F' @CJ!?A '@] @@E ?>']' AF F '=' F@'
A?B ?>'Z @' F= ' F ?<'1 'N d

*2J/(' & @' F=B@' @@?' F= ' AB@C' G= 'F@ E' A' F@' =' B= @E' D =? ' @E
1AC' F@' 1AAE' A1' I@= 'G F ?' F@' .' ,'9' @A ' :% ' - % Q : '1#3' '
C= ' F= ' 'F= 'I@@?' EA I @E GF@ F@C' >C= 'R>CAG ?>' ?' =' 1@E' G= '=
B= @E' D =? 'G F ?' F@' =J@' = @% N@d

W1ƀ 9 =' 1*+<=/' =' 4+0/ ''' &(2 ;' 49/' D' ' " B' /)' . ' (<;3#' H' - ' 'H.A'
E' !/2').' 1' HM' =' GG' 9/(/' 7+=' +' .' "' G.D
= ; *+(' 1*+<=/' ''49/' .I' ' .A' /4' 1' NG' W/ƀ 2((=' &' .' G' L' ' L' -#
=' H' W b .' "' G.D

5U" ' # P ' # ' ; # P ' % #

7 ' F@ ' - : ' , ' - 8 ' 3 @ ' ' . ' ' 7GFA A@B@C F= ' ? =G1 ' /=4(2# ')
=?E J = A ' AC A F@CG @ E@ CA ' =? ' FADI ?E '>CAG ?>' A?' 92"3 ' :=
DA @ ' ?' =? ' D =? = A?' A1' FAD ' F= ' I@' > ' A1' 1@ A? =?E' I@ ?>'
A?B @E' F@C@A1' F= ' I@' =I @ = ' F@' E C@ A?' A1' F@' A C ' A'
F@' <@D ' ?' D@?= ' @CB E@' 1AC' =? ' @C J ' ?A ' @] @@E ?>' 1A C @@?' =?E'
?A ' @ ' F=?' FC@@' N=d @=C ` AC A' I@' JDC A?@E' 1AC' =? ' @C J ' ?A '
@] @@E ?>' GA' @=C G F' AC G FA ' F=CE' =IA C =?E'G F' AC G FT
A ' A =C ' A?1 ?@ J @? =?E 1' =' J = @' ?E@C' F@' =>@' A1'] @@?'
@=C G F' AC G FA ' GF DD ?> N d

" 24 */=' 49+ '' & J/ #/+(=' &' 49/' E' ! /2' I ' 1' HM' =' .E' + ' :' =' ' /7' '' (/P
2&&/ ' 1/ 7+=' 12 ; ; 44/ :' +&4/(' 49/' GA49' 2&' *+ ' : ' =' 42' 9+(:' *+32<(' 1 ' =/ ' :'
<*#' .EYI ' //' J2*' .' " ' DH " ' ENA ' J2*' . ' " " ' EM ' E.
" 9 =' 1*+<=/' =' 4+O/ '' &(2 ; ' 49/' D'

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/=4(2# ')‘+'# =/+‘3+'0‘2(7+*# 2'‘+'# 1+'+*

7‘ F@‘ - :‘ ,‘ -8‘ 3 @ 4‘ ‘ .‘ ‘ ‘ !‘ GFA A@B@C‘ F= ‘ ? =G1 ‘ =?E‘ J = A ‘ IC@=<‘ EAG?‘ AC‘ ‘ EAG?‘ 4"‘ 4 < "5! ‘ #6&62 ‘ &(# "4 '‘ =? ‘ @=‘ I=?<‘ AC‘ @=‘ G= ‘ AC‘ F@‘ I=?<‘ E=C1 ‘ AC‘ ''1 ‘ A1‘ &(: 4 2! 2‘ 4‘ =? ‘C B@C‘ =?= ‘ EC= ?‘ C@ @CBA C‘ E44 ‘AC‘ J=C ‘ GF@C@T I ‘ =? ‘ =?E‘ 4"‘ : >! #! 2‘ F= ‘ I@‘ AC‘ F= ‘ I@‘ ?‘ E=?>@C‘ A1‘ I@ ?>‘ AB@ 'AG!@E‘ AC‘ E=J=>@E‘ AC‘ F= ‘ ? =G1 ‘ =?E‘ J= A ‘ FCAG‘ :" 6 ‘ 4"‘ > ‘ EAG?‘ @B@ ‘ ?E@CJ ?@‘ AC‘ A F@CG @‘ E@ CA ‘ =? ‘ >6 ' ‘ 5 <6"* ‘C ' ‘ A <‘ @‘ 1 AAE>= @‘ G@ C‘ ??@ ‘ AG ?> D= F‘ E = ?‘ G= @C A C @‘ AC‘ A F@C‘ GAC<‘ : 4 2! 2‘ 4‘ 6 ' ‘ E4" ‘ <6":4>"‘ ‘ #4 ‘ 4"‘ " " 4!" ‘ 4"‘ A?‘ 4"‘ : 4 2! 2‘ 4‘ =? ‘ ?=B >=I @‘ C B@C‘ AC‘ =?= ‘ F= ‘ I@‘ > ‘ A1‘ 1@ A? ‘ =?E‘ I@ ?>‘ A?B @E‘ F@C@A1‘ F= ‘ I@‘ =I @‘ = ‘ F@‘ E C@ A?‘ A1‘ F@‘ A C ‘ A‘ I@‘ <@D ‘ ?‘ D@?= ‘ @CB T E@‘ 1AC‘ 1@‘ AC‘ 1AC‘ =? ‘ @CJ‘ ?A ‘ @ ‘ F=?‘ FC@@‘ N d @=C ` A1‘ A‘ I@‘ J DC A?@E‘ 1AC‘ =? ‘ @CJ‘ ?A ‘ @] @@E ?>‘ GA‘ @=C ‘ G F‘ AC‘ G FA ‘ F=CE‘ =IA C‘ =?E‘ G F‘ AC‘ G FA ‘ A =C ‘ A?1 ?@J@?‘ =?E‘ 1‘ =‘ J= @‘ ?E@C‘ F@‘ =>@‘ A1‘] @@?‘ @=C ‘ G F‘ AC‘ G FA ‘ GF DD ?> H N d

/ ; 2J ')‘43/‘ " */=‘2& +'# =/+‘3+'0‘ 1 ‘ 2(:2 ')‘+'# :+ ; +)/‘42‘ 23=4(<14‘49/‘ '+J)+4 2'‘2& +‘ (J/(‘2(1+'+*

@ ‘ ‘ 7 & FA A@B@C‘ F= ‘ ? =G1 ‘ =?E‘ J= A ‘ A11‘ EC=G‘ D‘ AC‘ C@ J AB@‘ =? ‘ D @ ‘ F= <‘ AC‘ A F@C‘ J= @C = ‘ 1]@E‘ ?‘ F@‘ >CA ?E‘ =?E‘ @E‘ 1AC‘ @ C ?>‘ =? ‘ @=‘ I=?<‘ AC‘ @=‘ G= ‘ AC‘ F@‘ I=?<‘ #6& ‘ AC‘ G= ‘ A1‘ =? ‘ C B@C‘ =?= ‘ #"6! ‘ 6 > #> ‘ J=C F‘ " " 4!" ‘E44 ‘E4" ‘ <6 ": 4>" ‘ #4 ‘ >6 ' ‘ 5 <6"* ‘C ' ‘ 4"‘ 4 ‘ AC‘ F= ‘ ? =G1 ‘ =?E‘ J= A ‘ AD@?‘ AC‘ EC=G‘ D‘ =? ‘ 1 AAE>= @‘ AC‘ @‘ AC‘ EA‘ =? ‘ A F@C‘ ?Z C ‘ AC‘ J F @1@ A‘ =? ‘ ?=B >=I @‘ C B@C‘ AC‘ =?= ‘ G F‘ ? @? ‘ =?E‘ A‘ = ‘ F@C@I ‘ A‘ AI C ‘ RC‘ DC@B@? ‘ F@‘ =CC ?>‘ A?‘ A J D @ ?>‘ AC‘ J = ? = ? ?>‘ F@‘ ?=B >= A?‘ F@C@A1‘ F= ‘ I@‘ > ‘ A1‘ 1@ A? ‘ =?E‘ I@ ?>‘ A?B @E‘ F@C@A1‘ F= ‘ I@‘ =I @‘ = ‘ F@‘ E C@ A?‘ A1‘ F@‘ A C ‘ A‘ I@‘ <@D ‘ ?‘ D@?= ‘ @CB E@‘ 1AC‘ =? ‘ @CJ‘ ?A ‘ @] @@E ?>‘ @B@?‘ @=C ‘ =?E‘ ?A ‘ @ ‘ F=?‘ FC@@‘ NRd @=C ` AC‘ A‘ I@‘ J DC A?@E‘ 1AC‘ =? ‘ @CJ‘ ?A ‘ @] @@E ?>‘ GA‘ @=C ‘ G F‘ AC‘ G FA ‘ F=CE‘ =IA C‘ =?E‘ G F‘ AC‘ G FA ‘ A =C ‘ A?1 ?@T J@? ‘ =?E‘ 1‘ =‘ J= @‘ ?E@C‘ F@‘ =>@‘ A1‘] @@?‘ @=C ‘ G F‘ AC‘ G FT A ‘ GF DD ?> H N d

" B‘ 24‘ */=‘ 49+'‘ & J/‘ #/+(‘ &‘ 49/‘ 2&&/ '1/‘ 7+‘ 12 ; ; 44/ :‘ +&4/(‘ 49/‘ GA49‘ 2& <*#‘ .EYI‘ //‘ J2*‘ .‘ "‘ DH

" B‘ 9 ‘ 1*+<=/‘ ‘ &(+ ; /:‘ &(2 ;‘ 49/‘ D‘ E‘ ! /2‘ I‘ 1‘ ‘ =‘ .G‘ +'‘ :‘ N‘ ! /2‘ I‘ 1‘ AY‘ =‘ . GW. b

9/‘ 72(:‘ '‘ 4+* 1‘ +(/‘ '/7‘? +':‘ '‘)*+'‘ :‘ 49/‘ 1*+<=/‘ ‘ '/7‘ +‘ &+(‘ +‘ 4‘ (/P *+4/‘ 42‘ +'# 0:+ ; ‘ :(+ '‘ (/=/(J2 (‘ 7/ (‘ 4<'‘ /*‘ 427 ') "+49‘ +'‘ :‘ 7+4/(12<(=/ $ 79 19‘ 72(:‘ +(/‘4+0/ ''&(2 ;‘ 49/‘ N ! /2‘ I‘ 1‘ AY‘ =‘ .G W b‘ 9/=/‘ + : : 4 2'‘ +(/‘ J/(# ; "2(4+'4 + ; / ' : ; / '4=‘ +‘ 49/# ' P 1*<:/‘ 1+=/‘ 79/(/‘ *2=‘ 2& * &/‘ +'‘ :‘)(/+4 '6<(# 42‘ "(2"/(4# ;)9‘ /2+=</ &(2 ;‘ =<19 ; +* 1 2<‘ +14=‘ 9/‘ 2* ; & (49‘ (/=/(P J2 (‘ ;)9‘ 9+J/‘ 3//'‘ ; +* 1 2<=*# */4‘ 2& 3# 1<44 ')‘ 49(2<)9‘ 4‘ :+ ; '+' :‘ 49/(/‘ +(/ ; +'# = ; *+(‘ (/=/(J2 (‘ +'‘ :‘ "22*=‘ 79 19‘ ;)9‘ 3/‘ 1+<=/ :‘ 42‘ '<' :+4/‘ *+()/‘ : =P 4(14‘ 3# 49/‘ : /=4(<14 2'‘ 2& 49/ (‘ :+ ; =‘ ‘ 42‘ 9+(:‘ *+32<(‘ 1 '=//‘ :‘ '‘ ENA‘ J2*‘ .‘ "‘ ‘ EM‘ E.

W1b 9‘ 1*+<=/‘ ‘ 4+0/ 'R&(2 ;‘ 49/‘ D&4 E‘ ! /2‘ I‘ 1‘ HM‘ =‘ .G‘ +(‘ N ! /2‘ I‘ 1‘ AY‘ =‘ .H W b‘ 9/‘ 72(:‘ '‘ 4+* 1‘ +(/ '4(2:<1/:‘ 42‘ /V4/ ':‘ 49/‘ 1*+<=/‘ 42‘ "(2P 4/14‘ 49/‘ ; +4/(+*‘ <=/:‘ =/1<(/‘ :+ ; ‘ 2& :('+'=‘ 1‘ ‘ 42‘ 9+(:‘ *+32<(‘ &41 '=// :‘ V_ ENA‘ J2*‘ .‘ 6("‘ EM‘ E.

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7’ F@’ - :’ ,’ -8’3 @ ‘ ‘ .%’ ‘ %’7GFA A@B@C’ F= ‘ ? =G1 ‘ =?E4’J = A ‘D ‘4"’ <"45’ EAG?’ AC’ ?’ =? G @’E@ CA ‘=? ‘ IC E>@’75< < "’4 "’6 ‘’ " 6&’4*’56 "’4"’ 4 3’2J"’6 ‘’ !6#> ‘ 4"’6 > #> ‘4 "’4"’> # "’5<! <’ :"!#2 ‘ !6#> ‘4"’6 > #> ‘ 6 ‘’<!2<56’’"6! 56’’4"’ 6 6’ <6 ‘E6 ‘|4"’ EA’=? ‘ ?Z C ‘G F’ ? @? ‘=?E’ A’= ‘ F@C@I ‘ A’C@?E@C’ F’IC E>@% !6#> ‘4!(’6 > 0 #> ‘4"’ < ’<!2<56’’"6! 56’’4"’ 6 6’E6 ! 2’4 "’4"’> # "’ < ’ 6& ‘AC’ =? ‘D=C ’ F@C@A1% E=?>@CA ‘AC’ JD= =I @% F= %I@’ > ‘A1’1@ A? % =?E’I@ ?>’ A?B @E’ F@C@A1’ F= ‘I@’ =I @% =’ F@’ E C@ A?’A1’F@’ A C%’ A’I@’<@D ‘ ?’D@?= ‘ @CB E@’1AC’ 1@%AC’1AC’ =? ‘ @CJ ‘?A ‘ @ ‘ F=?’ FC@@’763’ @=C ` AC’ A’I@’ JDC A?@E’1AC’ =? ‘ @CJ ‘?A ‘@] @@E ?>’ GA’ @=C %’G F’AC’G FA ‘F=CE’ =IA C%’ =?E’G F’AC’G FA ‘A =C ‘ A?1?@J@? %’=?E%’1’=’J=@’ ?E@C’F@’ =>@’A1’] @@?’ @=C %’G F’AC’G FA ‘GF DD ?> H 1:3

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F@’J = A ‘E@ C A?’AC’E=J => ?>’A1’E> : ! ‘<##2 ‘ ‘ =E’ A’I@’G FA ‘EA I ‘D ? F=I @’= ‘=’J E@J@=?AC’= ‘ AJJA?’ =G

R B’ 24’ *2=-’ 49+’’ & J/’ #/+(=’ &’ 49/’ 2&&/’1/’7+=’/2 ; ; 44/ :’ +&4/(’ 49/’ GA49’2&’ <*#’ .EYI ’ //’J2*’ .’ "’ DH

h3d 9 =’1*+<=/’ =’4+0/ ’’ &(2 ;’ 49/’ D’ E’ ! /2’ I ’1’ HM’ =’ .H’ +’ :’ N’ ! /2’ I ’1’ AY’=’ . IW. b’ 2’ ; <19’ :2 34’9+:’/V =4/ :’ +=’42’ 79+4’7+=’+’ "<3* 1’3(:)/’2("+(4’2&’ 2’/’ 79 19’+’12<’4#’7+=’32<’ :’42’ (/"+ (’ ’’ /V’ V&2(:=9 (/’ :’ ’ ’ :’GEN’ /V’ ’ V&2(:=9 (/’ ’ ; ’ ’ :’GND’+’ :’ /)’1’ /(3#=9 (/’G ’ ’DIA’49+4’49/’ 2(:=’0 79/49/(’2J/(’+’#=4(/+ ;’2&’7+4/(’ 2(’ ’24 $ 7/(/’ ’4(2 :<1/ :’42’ (/ ; 2J/’49+4’ :2<34’+’ :’42’ /V4/’ :’49 =’1*+<=/’42’+*’ 3(:)/=

9/’1*+<=/’ =’+*=2’/V4/’ :/ :’42’J +:<14=’ +’ :’+T</ :<14=’ =2’+=’42’ "(24/14’+&& 492=/’))+’4 1’ =4(<14<(/=’ 79 19’ 9+J/’ ="(<’)’ / 49/(’2<4’2&’49/’ 12’=4(<14 2’’2&’(+*7+#=’ +’ :’1+’+*=’2(’&(2 ;’249/(’1+<=/=

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4 F@C@'=C@%' FAG@B@C%' =' >C@=' ? J I@C' A1' IC E>@ ' G F ?' F ' < ?>T EAJ' GF F' ' G=' J=E@' 1@ D? ' A' ?Z C@' AC' E@ CA %' I ' F@' @?= T J@? ' A1' D=C =C' = @ ' ?' AJ@' ? =? @ ' F@' A11@? @' G=' J=E@' =D =1%' = ' ?' F@' Z @' A1' & @ J ? @C' C E>@%' I ' d @A' -% ' - %' ' 8' ' F@' ' @A' :%' ' %' C@D@= ' F ' DCAB A?' A1' F@' & @ J ? @C' C E>@' %' =?E' G F' C@ D@ ' A' J =C' DCAB A? ' ?' A F@C' = @ ' '@?= %' 7 F=' F' D=C 'A1'= '1AC J@C' 'C@ = ?>' A' IC E>@ '=' @?= ' F=' 1' =? 'D@C A?' AC' D@C A? ' F= ' G 1 '=?E' J= A ' AG' D%' D ' EAG?%' AC' E@ CA '=? ' IC E>@%' AC' =? 'D=C ' F@C@A1%' AC' = @ J D ' A' A' EA%' AC' ? =G1 '=?E' G FA '= FAC ' C@ JAB@' AC' =<@' =? ' GAC<' F@C@ ? A' I@ A?> ?>%' AC' ?' =? G @' E C@ ' AC' DCA C@' F@' =J@' A' I@' EA?@%' F' A11@?E@C' AC' A11@?E@C %' I@ ?>' F@C@A1' =G1 ' A?B @E%' F=' I@'=EZ E>@E'> 'A1'1@ A? %' =?E' F=' 11@C' E@= F' =' ='1@ A?%' G FA ' I@?@1 ' A1' @C> %' F=' 1CAJ'=?E'=1 @C' F@' D= ?>' A1' F ' ' I@%'=?E' F@' =J@'=C@' F@C@I ' C@D@= @E H N@d

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@' >= @' 1@? '' A1' =? ' E@ C D A?' GF= A@B@C' AC' =? ' G= ' @' AC' >= @' AC'
=? ' D=C ' F@C@A1' C@ D@ B@ ' F= ' A?' A?B A?' F@C@A1' I@1AC@' ='
Z @' A1' F@' D@= @' 1AC' F@' 1 C ' A 1 ? @' 1AC1@ ' =?E' D= ' AB@C' =?E'
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2 ' ' @@E ?>' 1 B@' DA ?E ' = ' A' F@' Z @' F= ' @@ J ' J @ @ ;' =?E' GFA AT
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A?B @E' F@C@A1' ?' <@' J =??@C' F= ' I@' A J J @E' A' <@' AJT
J A?' >=A ' AC' FA @' A1' ACC@ A?' F@C@' A' I@' <@D ' A' F=CE' =IA C'
1AC' F' @C J ' ?A ' @] @@E ?>' G@ B@' J A? F ' = ' F@' A?B ?>'Z @'
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& F@C@' F@' DC A?@C' G= ' 1A ?E' 1@CC@ ?>' C=I I ' ?' =' F@E>@' =?E'
I@' F=E' =' EA>' G F' F J ' GF F' F=E' EA?@' A J @' >F ' E= J =>@' A' F@'
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F@ E' F= ' F@' ?Z C ' EA?@' A' F@' F@E>@' I ' F@' EA>' G= ' ?A ' =?'
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AIZ@ !' A1' EA ?>' E= J =>@' A' F@' F ?>' ?Z C@E' @C@' F@C@' G= ' ?A'
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@ ' -. ' 7 & FA A@B@C' F= ' ? =G1 ' =?E' CF= A ' I ' =? ' AB@C ' = ' = @ J D ' A' @ ' 1 C@' A' =? ' J ?@%' > # "' > <' ! >& ' 6 ' <6 ' !*' < ' & ! ' 5 " ' < " : '' '*!" ' 4 ' < ' 4** (# "' 54> #' : '2>! ''4**% 4 ' ' F= ' I@' > 'A1'1@ A? %' =?E' I@ ?>' A?T B @E' F@C@A1' F= ' I@' =I @%' = ' F@' E C@ A?' A1' F@' A C %' A' I@' <@D ' ?' D@?= ' @CB E@' 1AC' =? ' @C J ' ?A ' @] @@E ?>' 1A C @@?' =?E' ?A ' @ ' F=?' FC@@' N=d' @=C ` AC' A' I@' J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' @=C %' G F' AC' G FA ' F=CE' =I A C%' =?E' G F' AC' G FA ' A =C ' A?1 ?@ J@? %' =?E%' 1%=' J = @' ?E@C' F@' =>@' A1']T @@?' @=C %' G F' AC' G FA 'GF DD ?> H N d

44/ ; "4 ')' 42' =/4 & (/' 42' +' ; ' /

@ ' -9 ' 7 & FA A@B@C' F4= ' ? =G1 ' =?E' J = A ' = @' =? ' G= @C' A' I@' AFB@ @E' 4"' "> ' ? A' =? ' J ?@%' AC' ? A' =? ' I @CC=T ?@A ' D= =>@' A J J ? = ?>' F@C@G F%' G F' ? @? ' F@C@I ' A' E@ CA 'AC' E=J =>@' F' J ?@%' AC' A' F ?E@C' AC' E@ = ' F@' GAC< ?>' F@C@A1%' AC' F= ' G F' F@' <@' ? @? ' ? =G1 ' =?E' J = A ' D 'EAG?%' 1 ' D%' AC' A I C %' 4"' #6&62 ' 5! <' ! ' 4' # "4 ' ' 4: "> ' 4"' " # "' > ' =? ' = CG= %' G= @CG= %' EC= ?%' D %' @B@ %' AC' F=1 ' A1' AC' I@ A?> ?>' A' =? ' J ?@%' F= ' I@' > 'A1'1@ A? %' =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@' =I @%' = ' F@' E C@ A?' A1' '@' A C %' A' I@' <@D ' ?' D@?= ' @CB E@' 1AC' =? ' @C J ' ?A ' @] @@E ?>' @B@?' @=C %' =?E' ?A ' @ ' F=?' FC@@' 163' @=C ` AC' A' I@' J DC A?@E' 1AC' =? ' @C J ' ?A ' @] @@E ?>' GA' @=C %' G F' AC' G FA ' F=CE' =I A C%' =?E' G F' AC' G FA ' A =C ' A?1 ?@ J@? %' =?E%' 1' =' J = @' ?E@C' F@' =>@' A1'] @@?' @=C %' G F' AC' G FA 'GF DD ?>$' 5CAB E@E' F= ' F ' DCAB A?' F= ' ?A ' @] @?E' A' =? 'E= J =>@' A J J @E' ?E@C' >CA ?E

2' J/# ')' 7 +4/ (' '42' +-' : ' /' 23P =4(<14 ')' 49/' =9+&4' 1

W4b 24' */=' 49+'' & J/' #/+(=' &' 49/' 2&&/'1/' 7+=' 12 ; ; 44/ :' +&4/ (' 49)' GA49' 2&' <'#' .EY I ' //' J2*' . ' "' DH
" B 9 =' 1*+<=/' =' 4+0/ '' &(2 ; ' 49/' D' **' I' ' .' /4 ' 1 ' EN' =' N' + ' :' N' ' .M /4 ' 1 ' GA' 'N' + ' :' /V4/ ' : / :' =2' +=' 42' '1*<: /' + ' 49(+1 4/' + ' :' 249/ (' ; ' /(+*' &</*

=' 42' 9+(:' *+92 < ' 1 ' =//' :' "' ENA ' J2*' . ' "" ' EM ' E.
W1b' 9 =' 1*+<=/' =' 4+0/ '' &(2 ; ' 49/' N ' .M 14 ' 1 ' GA ' =' D
=' 42' 49/' 72(: =' '' 4+* 1=' =//' 49/' ' 24/' 42' =//' D' S : ' "' - MH
=' 42' 9+(:' *+32<(' 1 ' =/ /' :' "' ENA ' J2*' . ' "" ' EM ' E.

% @

8 '@ 5 3' '@ 3 3'W .' ' 12 3'(!

I '=? 'AG?@C' A1' =? '=EZA ? ?>' J ?@' ?' GAC< ?>' F@' =J@%' AC' '
=? 'D@C A?'E '@JD A @E' ?' F' GAC< ?> %1#3'

@ '- '7& FA A@B@C' F= ' ? =G1 =?E'J= A 'D 'EAG?
AC'E@ CA %'AC'E=J=>@'G F' ? @? ' A'E@ CA %'AC' @?E@C' @ @ @%=? '
@=J @?> ?@'AC'A F@C'@?> ?@'1AC' ?< ?>%'EC= ? ?>%' !6! 2 'AC'
GAC< ?>%'AC'1AC' ?'=? G @'= ?>' ?' ! ! 2 '#"6! ! 2 ' !0
6 ! 2 '4"' GAC< ?>' =? ' J ?@%' AC' =? '=DD =? @' AC' =DD=C= ' ?
A??@ A?'G F' =? ' F' @=J'AC' A F@C' @?> ?@%'%AC' =? ' = F%
I E ?>%'AC'@C@ A?' @E' ?' A?E ''F@'I ?@ 'A1'=? 'J?@%
AC'=? 'IC E>@%'G=>>A?G= %' AC' C ?<' 1AC' A?B@ ?>' J ?@C= '1CAJ'
=? 'J ?@%'GF@ F@C' F' @?> ?@%' = F%' I E ?>%'@C@ A?%'IC E>@%
G=>>A?G= %'AC' C ?<' I@' AJD @ @E'AC' ?'=?' ? ? F@ '' = @%'AC'
F= ' ? =G1 '=?E'J= A 'AD%'AI C %'AC'F ZE@C' F@'GAC<T
?>'A1'=? ' F' @=J'AC'A F@C'@?> ?@%'AC'A1'=? ' F'=DD =? @HAC'
=DD=C= '=' =1AC@ =E%'G F' ? @? ' F@C@I 'A'E@ CA 'AC'E=J=>@'
=? 'J ?@%'AC' A' F ?E@C%' AI C %'AC'E@ =' F@'GAC< ?>' F@C@A1%'5'
<6 '> 65*> ''6 #' &6! !4> ''5<4 '' AC' E6" !6 '' >'
<"4>2<' "' 6 '4"' > *6 '4"' #2 &62 '5! <'! '4
"4''4"'" # "'> '6 ''"4E ' <6! '4"' 6 '4*'5<6 4 "'
&6 "!6 '<' 6& ' <6 ':'&6# '> #'! '6 ''&! '4"'!<'4"'>E4 '
6 ''! ! #'E 6 '"6! 56' '4"'4 < "'K>6''4"'4 < "'54" '5<6 40
"'! '6 ''5! ': 4 2! 2'4"'6EE " 6! ! 2' 4'4"' 4 #'5!<'
4"' &E 4' #'! ' 6 '' &! '4"' < ' 54" ! 2'4"' :> ! ' < " 4*'
F= ' I@' > 'A1'1@A? %' =?E' I@ ?>' A?B @E' F@C@A1' F= ' I@
=I @%'=' F@'E C@ A?'A1' F@' A C%' A'I@'<@D ' ?'D@?=' @CB E@'
1AC'=? ' @CJ'?A'@] @@E ?>' @B@?' @=C '=?E'?A' @ ' F=?' FC@@'N@'
@=C ` AC' A'I@' JDC A?@E'1AC'=? ' @CJ'%?A'@] @@E ?>' GA' @=C %'
G F'AC'G FA 'F=CE' =IA C%'=?E'G F'AC'G FA ' A =C ' A?1?@T
J@? %'=?E%' 1'=' J=@' ?E@C' F@'=>@'A1'] @@?' @=C %'G F'AC'G FT
A 'GF DD ?> %NMd' 4

F@' DC A?@C'G=' A?B @ZZ' A1' J= A ' = ?>'G=@C' A'I@
A?B@ @E' ? A'=' J ?@%'GF F'G=' ='E' ?'A?@' A ?'=' F@'J ?@'A1'
AF?'5 <@C ?>'=?E'A F@C %'F ''D=C ?@C 4' ?'=?A F@C'A1' AF?'#@=?'
= @';' =?E' ?'=' F CE' A1' (AI@C ' (AI@C ' F@'A1@? @'G=' AJT
J @E'A?' F@' - 'A1' * = ' AF?'5 <@C ?>'=?E'F ' GA'ICA F@C'
G@C@' @ @@ ' A1' F@' J ?@%' =?E' GAC<@E' ' ' F@' F'A1' *= '
FI 'F=E' IACCAG@E' - % 'A1' F@'" AC F'=?E' A F' &= @ ' =?<'
?' F@' F'A1'* = %' (AI@C %' = ?>'1AC' F@'I=?<%' AA<'DA @ A?'
A1' F@'J ?@';' I ' 'E E' ?A ' =DD@=C'GF@ F@C%' ?' D C =? @'A1'=?'
E@@E'AC'Z E>J@? %' F@'?=J@' DA?' F@' =C 'G=' = @C@E'1CAJ'5 <T
@C ?>' A' (AI@C ' (AI@C %'=?E'1CAJ' F= ' J@' F@'J ?@'G=' GAC<@E'
IZX'F J ' (AI@C ' = @E' F= 'F@'G=' D ' ?'DA @ A?'I ' *= =I %'
= ' F@' = AC?@ '1AC' F@' I=?<';' =?E' F@' @]D = ?@E' F= ' A'I@' ='
= AC?@ '1AC' AF?' #@=?' = @%'GFA%'F@' = E%' G=' C @@'1AC' F@'
AJD=? %'=?E' I@ ?>' = <@E'GF@ F@C' I 'E@@E%'F@' =? G@C@E' ?' F@'
=11 ??= B@ ' @' F=E' @B@C' ? @'GAC<@E' F@' J ?@'1AC' F@' I@?@1 '
A1' = @%' 'G=' AIZ@ @E' F=' F@'1C ' A ?'1= @E%'=' F@'5 <

W:D 9=1*+<=/' =4+0/''&(2;'49/'D ' <*#' .EYI' /'J2*' '"' DH
E'!/2' I'1'HM'='Y'+':'N !/2' I'1'-(.' WwD' 9=1*+<=/' =&(+;/:'&(2;'49/'D
'G'Nd' 9/'72(:=?' = '=C@'/7 'E'!/2' I'1' '='D?'N !/2' I'1'AY'
=42' 9+(:'*+32<(' 1'=//' .'"' ='E'WD?+':'GH' 'GI' /4'1'GN'='.'
ENY'J2*'.'"'"'EM'E. 749'49/'+::42'=' '' 4+*1=' =42'9+(:'
W]D 24'*/==' 49+'' *J/'#/+(=' &'49/' *+32<(' 1'=//' .'"' ENA'J2*'.'""'
2&&/'1]'7+=12;;44/:'+&4/(' 49/' GY49'2& EM'E.

=4/+;/')'/='
=4+ 49='7+)'
)2'7+#=
.'&2(' 72(OP
')';'/=

'' ': 14'
';'4,4';/(
#'' <'
!/2'I'M'EM'
='(.'49/';'/'
;)94'3/'*+:'
+=49/'"(2P
"/(4#'2&49/'
"/(=2''"2=P
=/==2''2&'+':'
72(0')'4'
49244)9'2'*#
2='+)/'4'&2(
249/(=

@C ?> ' F=E' > B@?' D' DA @ A?' ' A' = @%' F@' G=' J @C@ ' F@' =1'@? ' AC' 1= AC' A1' F@' I =?<%' =?E' F@C@'G=' ?A' @B E@? @' F=' F@'G=' =' F=C@FA E@C' ?E'=' A' (A I@C %' F@'G=' J @C@ '=>@? ' AC' @CB=? %' =?:4F@' DCAD@C ' A >F ' A' F=B@' I@@?' = E' ?' F@'C@> @C@E'A11 @C' A1' F@' I=?< >' A J D=? ;' I ' F@' Z E>@ %' DA?' =' = @' C@ @CB@E%' G@C@' ?=? J A 'A1'AD ? A?' F=' ' F@' A?B A?' G=' C >F ' NNNd

& @' F=B@' @@?' F=' GF@C@' A?@' A1' F@' AG?@C ' A1' =EZA ? ?>' J ?@ %' = @C ?>' F='' =?' = CG=' I@ A?> ' A' F J%' E !@ ' F ' GAC< J @?' A' AD' ' D%' =?E' F@ '= ?>L A. ''*!# ' =?E' I@ @B ?>' F=' F@' F=' '=' C >F ' A' > B@' F' =?' ACE@C%' EA' A%' F@ '=C@' ?A ' > ' A1' 1@ A? ' 1AC' ADD ?>' D' F ''= CG= %' @B@?' FA >F' F@' J = @C' <?@G' F=' F@' F=E' ?A' C >F '1A' ' 1'=? ' A1' F@' GAC< J @?' <?@G' F=' F@' ADD ?>' A1' F@' = CG=' G=' =' J = A ' = ' A1' F ' J = @C%' F' GAC< J =?' G9 E' I@' > ' A1'1@ A? ' I!3

1' =' @=J @?> ?@' I@' @ ' ?' J A A?' G FA ' =? ' J = F ?@C ' = = F@E' A' %' G F' ? @? ' A' E=J =>@' ' AC' C@?E@C' ' @ @ %' F@' = @' ' G F ?' F@' = @%' 1!3

#=J => ?>' =' EC J' ZZ=AB@E' I '=' @=J' @?> ?@' ' ?A '=E=J => ?>' F@' @=J @?> ?@%' I ' E=J => ?>'=' =11A E ?>' D = @E' = CA ' F@' F=1 ' A1' =' J ?@%' ?' ACE@C' A' GAC<' =' @B@ %' ' E=J => ?>' =?' 7@C@ A?'H 7 @E' Y?' A?E ?>' F@' I ?@ ' A1' =' J ?@ H R*B

?' =?' = A?' =>= ? '=' F ?EC@E' A' C@ AB@C' A J D@? = A?' 1AC' F@' 1@ A? A ' E@ J A A?' I ' C A @C ' A1' =' @C = ?' @C@ A?' A1' F@' D = ?T 11 %' @E' ?' A?E ?>' F@' I ?@ ' A1' =' J ?@%' ' =DD@=C@E' F= %' =' @=C' =1 @C' F@ ' F=E' I@> ?' A' GAC<' F@%' J ?@%' F@ ' AA<' =' @= @' A1' =' =>' I@E' =?E' DAA ' =EZA ? ?>' ' = ' =' E =? @' A1' F= 1' =' J @' 1CA J' F@' 1 ?@' F@' =>' I@E' A? @E' A1' F@=D ' A1' C@1 @' C@% =?E' =' DCA @ ' F=E' I@@?' E AB@C@E' 1AC' @] C= ?>' AC@' 1CA J' F@' =>' & = F ?>' F@' =>' G=' =?' J DAC =?' D=C ' A1' F ' DCA @ %' =?E' A' DD ' F@' DAA ' G F' G= @C' 1AC' G= F ?>' F@' =>' F@' D = ? 11 ' E B@C @E' F@C@ A' =' C@=J' A1' G= @C' J @=?' A1' =' GAAE@?' CA >F' @C@ @E' DA?' D @ ' F@' CA >F' E E' ?A '=DDCA= F' F@' J ?@' ?@=C@C' F=?' F= 1' =' J @' F@' G @C' DD @E' FCA >F' F ' CA >F' G=' = ' 1 C ' @E' ?' & = F ?>' F@' =>%' =?E' 1AC' ?A' A F@C' D CDA @;' I ' I @b @? %' =?E' D' A' F@' J @' A1' F@' ?Z C ' A J D = ?@E' A1%' F=E' I@@?' C@> =C ' @E' ?' G= F ?>' F@' AC@' >A @?' 1CA J' F@' J ?@' F@' Z C '1A ?E' F= ' F@' CA >F' G= ' @E' ?' A?E ?>' F@' I T ?@ ' A1' F@' J ?@%' =?E' 'G= ' F@ E' F= ' = ' F@' Z C ' F=E' A' 1A ?E%' F@' A? 'b @ A?' A1' =G' G= ' G F@ F@C' F' =' C ?<' A E' I@' A' @E' 7 F@' I ?@ ' A1' =' J ?@' G= ' ?A ' J @C@ ' A' >@ ' F@' CA >F' AC@' 1CA J' F@' IAG@ ' A1' F@' J ?@%' I ' A' DCAE @' F@' AC@' @ 1' @D=C= @' 1CA J' F@' @=C F' GF F' ' ICA >F ' D' G F' FHNWd =?E' 7 ?T E@ ' = ' F= ' 'EA?@' =IA ' F@' J ?@' AG=CE ' DC@D=C ?>' F@' AC@' ?' =' J =C<@ =I @' = @' ;' =?E' = ' @C@ A? ' @E' 1AC' F ' D CDA @%' AC

*+ ;' 2& ( )94

2&4 ')' /') ''' ; 2& 4 ' ' 79/(/3## 4' =' := ;+)/ :

9+4' =' +'' 0/(/14 2' '$ 9+4' =' '2& "+(4' 2&' +' =4/+ ; /') ')/'

9' 3<= '/=' 2&' +' ; ''/(' '1*<: /=' +'*' 49+4' =' :2' /' 42' ; +0/' 49/' 2(/' '' +' ; +(P 0/4+3*/' =4+4/' +' :' +' 4(<'0' 2& 722 :' /(/14/ :' 42' 12' J/# 7+4/(' 42' 7+=9 49/' /+(49' &(2 ;' 49/' 2(/' =' 49/(/&2(/' 7 49 '' 49/' =4+4<4/

'"%B /)' J' 2' /=' G ' ' ' ' GNH' :' ' ' '.E.' 9/')(2<' :' 2& : /1 = 2'' =' '2& =4+4/ :' 3<4' "(23+3*# 49/' 6< :) /=' 492 ')* 4' 49/' "2==/== 2'' 2& 23/(4=' T< 4/' =<&& 1 /' 4' +)+ '=4' +' 7(2') :2/(' '' 49/' (/"2(4' '' M' ' ' +(0/' '=+ :' 0' 4' +"P "/+(=' 49+4' (' +=/' 7+=' '' "2==/== 2'' 3# 9=' =/(J+'4' (' 23/(4=? 3<4' 49/(/' =' '249 ')' 42' 4+0/' 49/' "(2"/(4# 2<4' 2& 49/' & (=4*/==//=$ ':' 2(:' 3 ')/(' ' %' =+ :' 0' 4' +""/+(=' 49+4' 49/' ; '/' =' 72(0/ :' 2'' +112<'4' 2& (' +=/? 3<4' ' =92<*:

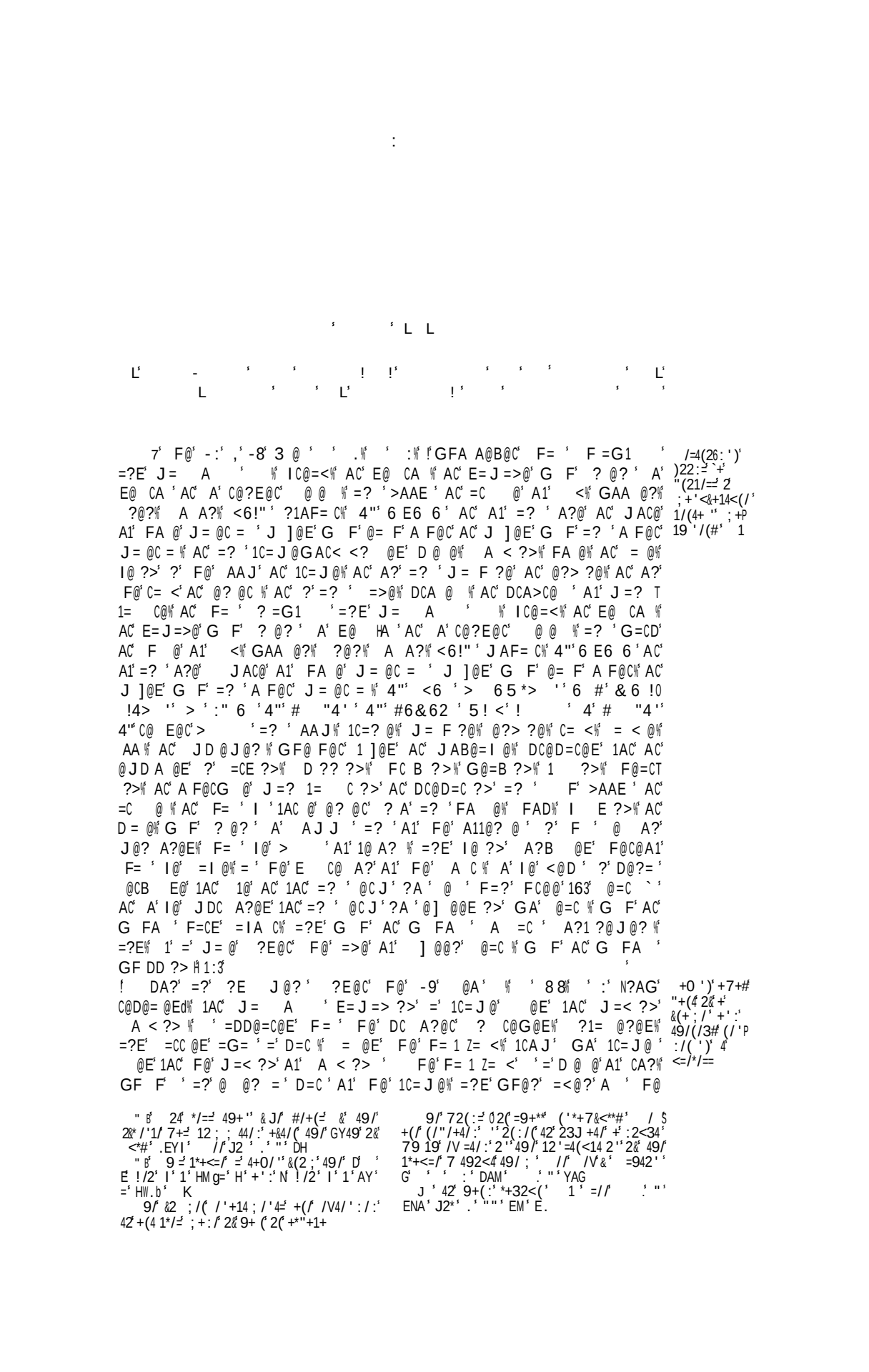
49 'O' 4* +4' (' 23/(4=' 9+J ')' 9=' '+ ; /' 2'' 49/' 1+(4=' 72<*:' 3/' =2 ; /' /J :/ '1/' +4' */+=4' 49+4' 9/' 7+=' 72(0 ')' 49/' ; 9/ S W %' /)' ,' + ; /=' E' ' ' .H.' 2(:' 3 ')/(' ' '6 ' "' ENH W %' /)' ,' 2((=' N' M' ' 'GI.' //' /V ,' ((+1/#' E4 ' "' NYM Wwb' /)' ,' 9 44 ')9+ ; ' N' !' ' ' GHI' +44/=2' ' ' : /1 : /:' <"2'' D' ' E ! /2' I' 1' HM' =' D W %' /(' +44/=2' '

: 9 8 @ 5 3 @ 3 3 W . $% & J

= D = @ A1 E@DA 1AC > ?DAGE@C =?E @ =?E A F@C J ? \>
J = @C = =C@ G F ?F@ DCA @ A?A1 F@ = @ N/d F@ AC@L
?A I CA >F D I @ 1 I A>@ F@C G F @=C F =?E A F@C
J = @C = = F@E A GF F J I@ @D=C= @E 1CA J A Z?=<@
GF= I CA >F D AC@ F C ?<3= @E ?:F@ DCA @ A1
F @D=C= A? =?E F= @D=C= A?D=C A1 F@ I ?@ A1!=
J ?@ =?E F@C@1AC@ F@ C ?<G= !=?@C@ A?@E ?A?E ?>
F@I ?@ A1=J ?@G F ?F@ . , 9 AA : - NJd

3B / (* 2*/(:)/ 49+4 &* /T</=4 2 7+= 49/ =+ ; / += & 4
W ; +(7/** & * /< ' : (/ :2& 9+ :+(=/ 2 + ' : 14 ; / '4&2('6<(')
4/ =420/ . I DMI 9/12<(4 +)(// : 4* /4(<'0

:



NAM

8 '@ 5 3' > $% &'

1C= J @' ' C@?E@C@E' @ @ ;' I ' ' J= ' I@' =<@?' A ' =?E' =>=1?
C@D = @E' G FA ' ?Z C ' A' F@' 1C= J @%' =?E' ' AJ@ J@ ' A' C@= E'
GF@?' F@' 1C= J @' ' =<@?' A' D @ @ ' A' IA' @=?@E ' * A ' A1' F@
A F@C' D=C ' A1' F@' 1C= J @' J = ' ?' <@' J =??@C' I@' =<@?' A '?E'
C@D = @E ' F@' 1C= J @ ' ?' F ' = @' G@C@' ?A ' A F=CG @' ?Z C@E'
F=?' I ' =< ?>' =G= ' F@' F= 1 Z= < ' ' G= ' AIZ@ @E%' F= ' F '
C@ J AB= ' A1' F@' F= 1 Z= <' G= ' ?A ' =' E= J => ?>' A1' F@' 1C= J @' G F ?
F@' = @%' GF F' ' G= ' A? @?E@E' =DD @E' A? Z' A' = = ' A1'
I C@=< ?>%' I@?E ?>%' AC' C= ? ?>' AJ@' D; ' A1' F@' 1C= J @%' =?E' ?A ' A'
F@' C@ J AB= ' A1' =' D=C %' FA >F' F= ' D=C ' J >F ' F@' =?' @ @? = ' D=C '
%' DA?' =' = @' C@ @ G@E%' F@' Z E>@ ' G@C@' ?=? J A ' A1' AD ? A?
F= ' F@' =< ?>' A ' =?E' =CC ?>' =G= ' F@' F= 1 Z= Z<' G= ' =
E= J => ?>' F@' 1C= J @' G F ?' F@' J @=? ?>' A1' F@' -9' @A' %' = ' '
J =E@' F@' 1C= J @' J D@C1@ ' =?E' ?AD@C= B@%' N d

22 ; = ! @' - -' @A' %' ' : %' ' %' J =E@' ' =' =D = ' 1@ A? ' A' IC@=<
? A' =? ' FA @%' , %' G F' ? @? ' A' E@ CA ' !=? ' @C>@' AC' A F@C'
GAA @?' >AAE ' ?' F@' AAJ%' AC' =? ' AA ' @ J D A @E' ?' F@' J=< ?>'
F@C@A1%H =?E' ' G= ' FA E' F= ' E@ CA ?>' DZC ' A1' =' AA J' E E' ?A'
A J @' G F ?' F@' J @=? ?>' A1' F= ' = @%' NEd

! 22 :-' (/ ; + '' '' +' 4+) / ' "(21/==' 2(' "(2) (/=-' 2& ; + ' <&+14<(/ ' 492<) 9' 49/' 4/V4<(/' 9/' 12 ; "*/4/ ' &' 49/#' 3/' ' 24' 3(2<) 94' ' 42' +' 12 ' : 4 2 '' & 4 &2(' =+*/

F@' 1 C ' A ? ' F=C>@E' F@' DC A?@C 'G F' J= A ' E=J=> ?>'
' D @ @ ' A1' GAC @E' 11%' 7 ?' =' @C = ?' DCA @ ' A1' J=? 1= C@%H
G F' ? @? ' A' E@ CA ' F@' =J @ ' F@C' A ? ' = @E' F@' >AAE '
A' I@' ?' 7 =' @C = ?' =>@' A1' J =? 1= C@%H =?E' A F@C ' = @E' F@J'
A' F@' 7 ?' F@' D HA>C@ ' E1' J =? 1= C@ H F@' DCA @ AC ' G@C@
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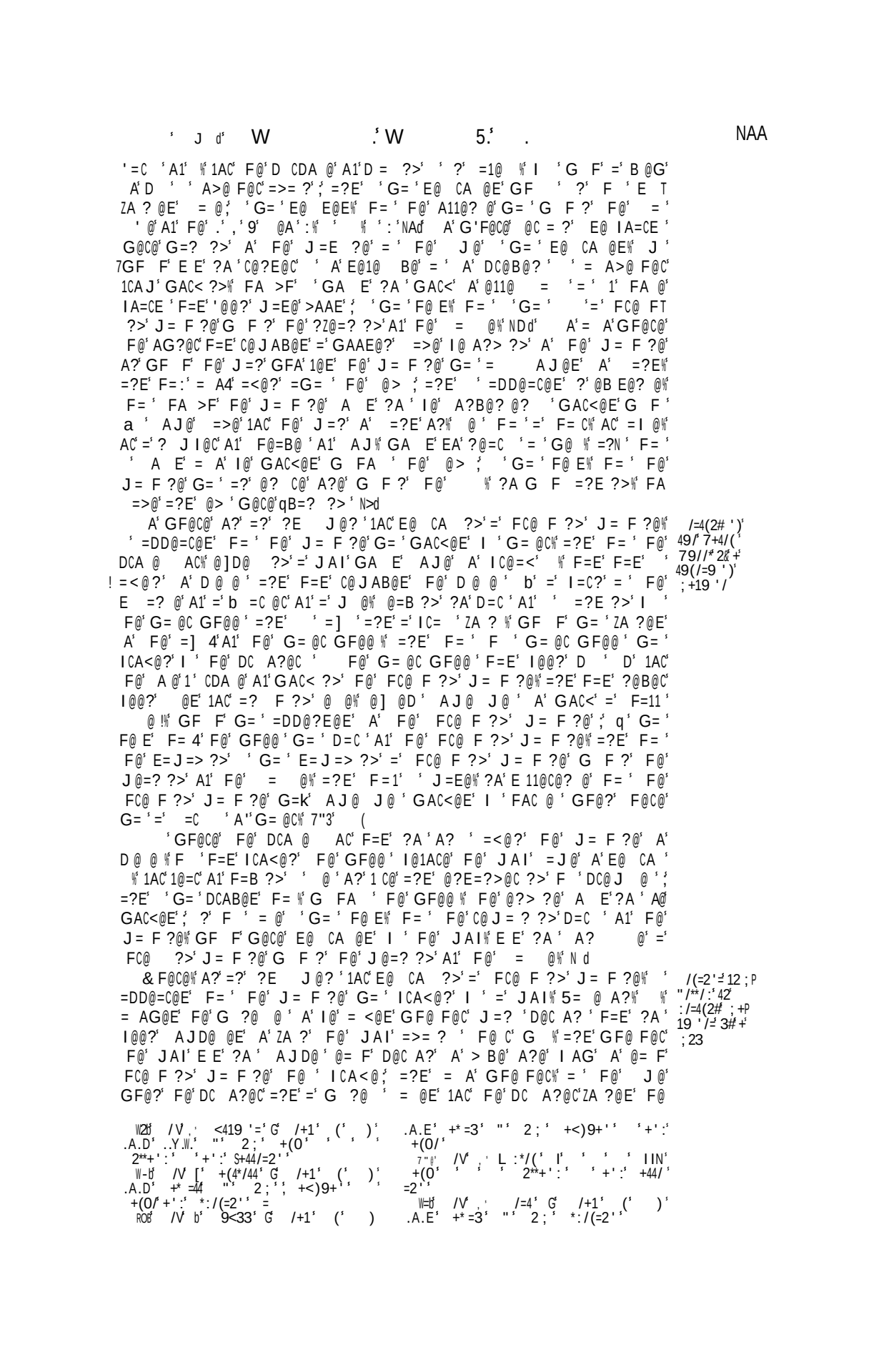

mob, they did not agree together to run away from the mob the first opportunity. (*t*)

A table for making bricks.

A table with a hole in it for water, used in the manufacture of bricks, was held not to be a machine 'prepared for or employed in any manufacture,' within the 7 & 8 Geo. 4, c. 30, s. 4. (*u*)

It is not necessary that any part of a machine should be broken; a dislocation or disarrangement of it which is injurious is sufficient.

The prisoner was indicted for damaging a machine employed in the manufacture of iron. The prosecutors were manufacturers of iron, and the prisoner was one of their workmen. Their engineer being at the door of the rolling mill engine-house, and within sight of the puddling furnace and squeezers, saw the prisoner coming down the race (an iron pathway on which the puddling balls are conveyed from the furnace to the squeezers) with a sledge-hammer, which he was drawing along with tongs towards the squeezers, the same way as if he was engaged in drawing a puddling ball. He put the sledge-hammer between the jaws of the squeezers, the engine being then in motion. There is a sort of step in the lower jaw of the squeezers between the narrow and the wide part, and the practice is to hold the puddling ball with the tongs in the wider part of the squeezers against the step until, by the action of the squeezers, it is partially crushed, and then to remove it into the narrower part of the squeezers. By this method the strain on the engine (worked by steam) which would result from forcing the balls at once into the angle of the squeezers, is avoided. The prisoner put the hammer into the upper part of the squeezers, and immediately there was a loud report, as of a blow, shaking the building. The engineer called out, 'There, young man, you have done something now;' he made no reply; but took the hammer from the squeezers with the tongs. The engineer examined the squeezers, but perceived no mark. He went into the squeezers' hole and examined the carriage of the spur-wheel of the engine and the rests; they were displaced; the silling also of the carriage was displaced. These injuries would not have occurred if the sledge-hammer had not been put in. The connecting-rod was displaced and lifted up, but the engine was not so much displaced as to prevent the work from going on; it continued to roll puddled bars; no part of the machinery was broken. The oak silling and the brickwork under it had given way and sunk, and the carriage went down with it. The actual damage done to the squeezers was three shillings, and the total damage to the machine five shillings. The value of the whole machine was five thousand pounds. The millwright included the silling as part of the machine. If the silling had not given way, the probable damage would have been upwards of one thousand pounds. The sledge-hammer was fourteen or fifteen pounds weight. It was objected, 1st, that express malice must be proved, and there was no evidence that the prisoner knew what the consequences of his act would be: but Platt, B., held that everything wilfully done, if injurious, must be inferred to be done with malice. 2nd, that there was no damage to any part of the machine; for the silling was no part of the machine, but only that part which was in motion. 3rd, that

(*t*) Rex *v.* Crutchley, 5 C. & P. 133.
(*u*) Reg. *v.* Penny, Arch. C. L. 454. 15 Ed. Jervis, C. J., after consulting Lord Campbell, C. J.

CHAPTER THE FIFTY-SEVENTH.

OF BURNING AND DAMAGING SHIPS AND OTHER VESSELS, AND ARTICLES THEREUNTO BELONGING.

Setting fire to a ship.

By the 24 & 25 Vict. c. 97, s. 42, 'whosoever shall unlawfully and maliciously set fire to, cast away, or in anywise destroy any ship or vessel, whether the same be complete or in an unfinished state, shall be guilty of felony, and being convicted thereof shall be liable, at the discretion of the court, to be kept in penal servitude for life or for any term not less than three (*a*) years—or to be imprisoned for any term not exceeding two years, with or without hard labour, and with or without solitary confinement, and, if a male under the age of sixteen years, with or without whipping.' (*b*)

Setting fire to ships to prejudice the owner or underwriters.

Sec. 43. 'Whosoever shall unlawfully and maliciously set fire to, or cast away, or in anywise destroy any ship or vessel, with intent thereby to prejudice any owner or part owner of such ship or vessel, or of any goods on board the same, or any person that has underwritten or shall underwrite any policy of insurance upon such ship or vessel, or on the freight thereof, or upon any goods on board the same, shall be guilty of felony, and being convicted thereof shall be liable, at the discretion of the court, to be kept in penal servitude for life, or for any term not less than three (*a*) years—or to be imprisoned for any term not exceeding two years, with or without hard labour, and with or without solitary confinement, and, if a male under the age of sixteen years, with or without whipping.' (*c*)

Attempting to set fire to a vessel.

Sec. 44. 'Whosoever shall unlawfully and maliciously, by any overt act, attempt to set fire to, *cast away, or destroy* any *ship* or vessel, *under such circumstances that if the ship or vessel were thereby set fire to, cast away, or destroyed, the offender would be guilty of felony*, shall be guilty of felony, and being convicted thereof, shall be liable, at the discretion of the court, to be kept in penal servitude for any term not exceeding fourteen and not less than three (*a*) years—or to be imprisoned for any term not exceeding two years, with or without hard labour, and with or with-

(*a*) Not less than five years if the offence was committed after the 25th of July, 1864. See vol. 1, p. 73.

(*b*) This clause is taken from the 7 Will. 4, & 1 Vict. c. 89, ss. 4, 6. Under sec. 4, the offence of setting fire to a ship or vessel whereby life was endangered was capital, but that punishment is abolished.

The words 'injuries to ships' before this section were accidentally omitted in reprinting the Bill after it passed the Select Committee of the Commons.

As to hard labour, &c., see *ante*, p. 895, vol. 1, pp. 80, 81.

(*c*) This clause is taken from the 7 Will. 4 & 1 Vict. c. 89, s. 6.

As to hard labour, &c., see *ante*, p. 895, vol. 1, pp. 80, 81.

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or concealing buoys and other sea marks.

cast adrift, remove, alter, deface, sink, or destroy, or shall unlawfully and maliciously do any act with intent to cut away, cast adrift, remove, alter, deface, sink, or destroy, or shall in any other manner unlawfully and maliciously injure or conceal any boat, buoy, buoy-rope, perch, or mark used or intended for the guidance of seamen or the purpose of navigation, shall be guilty of felony, and being convicted thereof shall be liable, at the discretion of the Court, to be kept in penal servitude for any term not exceeding seven years, and not less than three (*i*) years—or to be imprisoned for any term not exceeding two years, with or without hard labour, and with or without solitary confinement, and, if a male under the age of sixteen years, with or without whipping.' (*j*)

Destroying wrecks or any articles belonging thereto.

Sec. 49. 'Whosoever shall unlawfully and maliciously destroy any part of any ship or vessel which shall be in distress, or wrecked, stranded, or cast on shore, or any goods, merchandise, or articles of any kind belonging to such ship or vessel, shall be guilty of felony, and being convicted thereof shall be liable, at the discretion of the Court, to be kept in penal servitude for any term not exceeding fourteen and not less than three (*i*) years—or to be imprisoned for any term not exceeding two years, with or without hard labour, and with or without solitary confinement.' (*k*)

12 Geo. 3, c. 24. Persons wilfully destroying ships of war, arsenals, dock-yards, &c., or any timber, &c., or stores.

The 12 Geo. 3, c. 24, relates to the King's ships of war, arsenals, &c., and enacts, 'that if any person or persons shall, either within this realm or in any of the islands, countries, forts, or places thereunto belonging, wilfully and maliciously set on fire, or burn, or otherwise destroy, or cause to be set on fire, or burnt, or otherwise destroyed, or aid, procure, abet, or assist in the setting on fire, or burning or otherwise destroying of any of his Majesty's ships or vessels of war, whether the said ships or vessels of war be on float or building, or begun to be built, in any of his Majesty's dock-yards, or building or repairing by contract in any private yards, for the use of his Majesty, or any of his Majesty's arsenals, magazines, dock-yards, rope-yards, victualling offices, or any of the buildings erected therein, or belonging thereto; or any timber or materials there placed for building, repairing, or fitting out of ships or vessels; or any of his Majesty's military, naval, or victualling stores, or other ammunition of war, or any place or places where any such military, naval, or victualling stores, or other ammunition of war, is, are, or shall be kept, placed, or deposited;' the person or persons guilty of any such offence shall be adjudged guilty of felony, and suffer death without benefit of clergy. (*l*) By the second section, persons committing these offences out of the realm, may be indicted and tried for the same either in any county within

(*i*) Not less than five years if the offence was committed after the 25th of July, 1864. See vol. 1, p. 73.

(*j*) This clause was framed from the 9 & 10 Vict. c. 99, s. 28. That section appears to have been very improvidently repealed by the 17 & 18 Vict. c. 120, in consequence of the passing of the Mercantile Marine Act, 17 & 18 Vict. c. 104. Sec. 414 of that Act imposes only a pecuniary penalty on any person who wilfully or negligently injures any buoy or beacon, or removes, alters, or destroys any light-ship, buoy, or beacon, in addition to the expense of making good the damage done. This is a punishment wholly inadequate to the offences in the 9 & 10 Vict. c. 99, s. 28, and therefore this clause was introduced.

As to hard labour, &c., see *ante*, p. 895, vol. 1, pp. 80, 81.

(*k*) This clause is taken from the 7 Will. 4 and 1 Vict. c. 89, s. 8.

As to hard labour, &c., see *ante*, p. 895, vol. 1, pp. 80, 81.

(*l*) See *ante*, p. 905, note (*x*).

in the 7 & 8 Geo. 4, c. 29, s. 17, where it was meant to include boats, the words were, 'vessel, barge, or boat,' clearly making a distinction between a vessel and a boat. Patteson, J., 'That the term vessel would in common parlance include this boat is clear, but whether in this Act of Parliament it was meant to include such boats is the question.' 'I incline to think that this boat is within the clause in the Act of Parliament; but as the word vessel must have the same construction in all other Acts of Parliament, it might lead to inconvenience, and therefore if necessary I will take the opinion of the judges upon it.' (*p*)

Part owner.

We have seen that a part owner might be guilty of the offence of setting fire to a ship within the 7 & 8 Geo. 4, c. 30, s. 9. (*q*)

Indictment.

In one case it was objected that the indictment was bad, because it did not allege that the damage was done 'otherwise than by fire;' but it was held to be sufficient, as it was alleged to be done by beating a hole in the bottom of the boat. (*r*)

Indictment against accessories before the fact for a substantive felony in casting away a ship. Jurisdiction of the Central Criminal Court. The 1 Vict. c. 89, s. 6, applied where there was a policy on goods, though they were not put on board the vessel.

One count alleged that E. Loose, a certain vessel on the high seas feloniously did cast away with intent to prejudice A. Howden and another, being part owners of the said vessel, and that the prisoners, within the jurisdiction of the Central Criminal Court, did feloniously incite the said E. Loose to commit the said felony. Other counts varied the intent. Howden and Anistice were owners of one-fourth of the ship, and one of the prisoners of the other three-fourths; the goods, which were put on board by Zulietta and Co., the charterers of the ship, were insured at Lloyd's, the intent to prejudice the underwriters on that policy being alleged in one of the counts; but in the case of three different policies on goods, which were effected by the prisoners, no part of such goods were ever put on board. The ship was wilfully sunk by Loose, the captain, on the high seas, and there was a total loss (except a very trifling salvage) of both ship and cargo, and the jury found the prisoners guilty of the whole charge. It was objected, 1st, that the indictment was not properly framed as an indictment for a substantive felony within the 7 Geo. 4, c. 64, s. 9, but as an indictment at common law against the principal and accessory before the fact, and, as the principal had not been convicted, the accessory could not be tried or convicted upon it; 2nd, that the Central Criminal Court had no jurisdiction to try an accessory before the fact to a felony on the high seas, unless the principal had been committed to or detained in prison by this court for such felony; 3rd, as the 1 Vict. c. 89, s. 6, described the intent to be 'to prejudice the persons who shall underwrite any policy of insurance upon goods on board the ship,' no evidence was admissible as to the three policies on goods affected by the prisoners, where no goods had been put on board. But, on a case reserved, the judges were of

(*p*) Rex *v.* Bowyer, 4 C. & P. 559. Verdict, not guilty. Could a coracle be considered a vessel within this statute?

(*q*) Rex *v.* Philp, R. & M. C. C. R. 263, *ante*, p. 918. See this case also as to the entry in the registry of vessels, and as to the joint ownership of shares in vessels. Ibid.

(*r*) Rex *v.* Bowyer, *supra*. In Benyon *v.* Cresswell, 12 Q. B. 899, it was held that a pleasure-boat of seven tons burthen was not 'a ship or vessel' within the 8 & 9 Vict. c. 89, s. 34; and in Morewood *v.* Pollock, 1 E. & B. 743, a point was determined as to a lighter; but neither case throws any light on the meaning of the words 'ship' or 'vessel.'

opinion, as to the first objection, that the description of the offence was not altered by the statute. It might have been put in a different shape, but every allegation in this count would have been included in any other. As to the second objection, that the 4 & 5 Will. 4, c. 36, s. 22, must be taken distributively, as to the commission of oyer and terminer and gaol delivery. There was a general power to hear and determine all offences committed on the high seas, though the gaol delivery commission only extended to all persons committed or detained. As to the last objection, that the words in the statute were a mere description of a policy on goods. And they unanimously held the conviction right. (*s*)

Misconduct endangering ship or life or limb a misdemeanor.

By the Merchant Shipping Act, 17 & 18 Vict. c. 104, s. 239, 'any master or any seaman or apprentice belonging to any British ship who by wilful breach of duty, or by neglect of duty, or by reason of drunkenness, does any act tending to the immediate loss, destruction, or serious damage of such ship, or tending immediately to endanger the life or limb of any person belonging to or on board of such ship, or who by wilful breach of duty, or by neglect of duty, or by reason of drunkenness, refuses or omits to do any lawful act proper and requisite to be done by him for preserving such ship from immediate loss, destruction or serious damage, or for preserving any person belonging to or on board of such ship from immediate danger to life or limb, shall for every such offence be deemed guilty of a misdemeanor.'

Penalty on pilot endangering ship, life, or limb.

Sec. 366. 'If any pilot, when in charge of any ship, by wilful breach of duty or by neglect of duty, or by reason of drunkenness, does any act tending to the immediate loss, destruction, or serious damage of such ship, or tending immediately to endanger the life or limb of any person on board such ship; or if any pilot, by wilful breach of duty or by neglect of duty, or by reason of drunkenness, refuses or omits to do any lawful act proper and requisite to be done by him for preserving such ship from loss, destruction, or serious damage, or for preserving any person belonging to or on board of such ship from danger to life or limb, the pilot so offending shall for each such offence be deemed guilty of a misdemeanor, and if a qualified pilot, also be liable to suspension and dismissal by the authority by which he is licensed.' (*t*)

Punishment.

By Sec. 518. In all places within her Majesty's dominions except Scotland, (*tt*) 'every offence by this Act declared to be a misdemeanor shall be punishable by fine or imprisonment, with or without hard labour. And the Court before which such offence is tried may in England make the same allowances and order payment of the same costs and expenses, as if such misdemeanor had been enumerated in the Act of the 7 Geo. 4, c. 64, or any other Act that may be passed for the like purpose; and may in any other part of Her Majesty's dominions make such allowances and order payment of such costs and expenses (if any) as are payable or

(*s*) Reg. *v.* Wallace, 2 M. C. C. R. 200. S. C. C. & M. 200.

(*t*) Sec. 367. 'If any person, by wilful misrepresentation of circumstances, upon which the safety of a ship may depend, obtains or endeavours to obtain the charge of such ship, such person, and every other person procuring, abetting, or conniving at the commission of such offence, shall, in addition to any liability for damages at the suit of the party aggrieved, incur a penalty not exceeding one hundred pounds, and, if the offender is a qualified pilot, he shall also be liable to suspension or dismissal by the pilotage authority by which he is licensed.'

(*tt*) As to Scotland, see s. 530, and following sections.

allowable upon the trial of any misdemeanor under any existing act or ordinance, or as may be payable or allowable under any act or law for the time being in force therein.' (*u*)

Offence, where deemed to have been committed.

Sec. 520, 'For the purpose of giving jurisdiction under this Act, every offence shall be deemed to have been committed, and every cause of complaint to have arisen, either in the place in which the same actually was committed or arose, or in any place in which the offender or person complained against may be.'

Construction of the words 'act tending to the immediate loss,' &c.

On an indictment on the 17 & 18 Vict. c. 104, s. 239, for doing an act tending to the loss of a ship, it appeared that the prisoner struck a light with a match, and lighted a candle, in a part of the ship forbidden by the ship's regulations, and threw down the match before it was extinguished, but there was no sufficient evidence that a fire which occurred six hours afterwards arose from this act; it was contended that the act charged must be followed by the loss of the ship. Bramwell, B., 'I am of opinion that if the act tended to the loss, destruction, or damage of the ship, though neither result followed, it is a misdemeanor within this section; as if a man should stick a lighted candle in an uncovered barrel of gunpowder, though he put it out immediately, I think that would be an act tending to the damage of the ship. The latter part of the section is, I think, open to the same construction, and both would be illustrated by two persons being together in the immediate neighbourhood of an explosive and unprotected material, and one lighting a candle, and the other omitting to put it out; the first would be guilty under the former clause of the section, and the second under the latter.' And the jury were told that 'to convict upon this indictment you must be satisfied that the act done was dangerous, having regard to the place, or the contents of the place in which it was done; for, if not, it would not be an "act tending to the immediate loss, destruction, or serious damage of the ship;" but you need not be of opinion that what afterwards took place was the result of that act.' (*v*)

(*u*) These offences by this section may also be dealt with summarily. See 7 Geo. 4, c. 64, and generally as to costs, vol. 1, p. 86.

(*v*) Reg. *v.* Gardner, 1 F. & F. 669.

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therefore, it ought not to be looked upon as limited by the latter branch to cases where the injury is done by some one other than the person who erected the monument or the heir of the deceased. But even if it were contended that this passage shewed that such person or the heir could alter or deface a monument, it seems plain that such is not the law. A monument affixed to a church or in a churchyard is just as much in the possession of the incumbent as the church and churchyard, as in shewn by the action by the heir being an action *on the case*: consequently the heir would be guilty of a trespass if he defaced the monument without the leave of the incumbent. But it may be said that the incumbent can give such a consent as will justify the heir in dealing with the monument; it is conceived, however, that he can give no such consent. He is merely tenant for life at the utmost, and cannot lawfully do anything to the detriment of the freehold, or of anything annexed to and parcel of it, and what he cannot lawfully do himself, he cannot lawfully permit another to do. In Francis *v.* Ley, above cited, it was held that 'it is not lawful for any to break or deface any *superstitious* pictures in any church or aisle, but the ordinary only; and if any do so without license from the ordinary he shall be bound to his good behaviour, as was done in Prickett's case by Sir C. Wray, chief justice of the King's Bench.' This is a very strong authority to shew that the incumbent cannot break or deface anything annexed to the freehold of the church. If he cannot deface superstitious annexations, *à multo fortiori* he cannot deface monuments lawfully erected.

A little consideration will also prove that the representative of a family for the time being cannot lawfully deface them. When a person erects a monument, he dedicates it *for ever* for every purpose which it may lawfully serve. He intends it to be *in perpetuam memoriam* of every thing stated in it. As soon as it is annexed to the freehold it passes into the possession of the incumbent to be preserved for the purposes for which it was erected. Now, what are those purposes? It becomes *for all future time* legal evidence of all the births, marriages, and deaths mentioned in it in every case where any question may arise relating to any of them. This clearly proves that the representative of the family for the time being can have no right to destroy it; for all other members of the family then living or thereafter to be born have or will have an interest in it. The present representative may be a peer, the last of his branch of the family, and there may be a monument which alone would prove the descent of the next heir to the title; it is impossible to suppose that he can lawfully destroy such a monument, and thereby prevent the next heir from succeeding to the peerage. So it may be that the present representative is tenant for life of an estate entailed on the heir male of the family; can he lawfully destroy a monument which may prove who is entitled to succeed to the estate on his death? A monument also may be evidence for a person wholly a stranger in blood to the person who erected it. Suppose an estate be entailed on the heirs male of A. with remainder to A.'s right heirs; a monument may shew that C. the son of A. died without issue male, and may thus prove that a female descendant of A. was seised in fee of the estate, and so establish the title of a stranger in blood, to whom the female had devised the estate. These instances, which have occurred in the families of two peers, plainly shew that the representative of a family for the time being cannot lawfully alter or destroy any inscription on a monument erected to a member of his family. In fact his position is extremely like that of a tenant for life of an estate under lease, who may bring an action on the case against any one who cuts down timber, on the estate, but cannot cut it himself, or permit it to be cut by any other person.

It might also be well contended that the public have the same interest in a monument that they have in a register of births, marriages, and deaths, and that an inscription on the one can no more lawfully be defaced by any one than an entry in the other. But amply sufficient has been said to shew that there can be no doubt whatever that no one can lawfully deface any monumental inscription.

Where an aisle in a church belongs to a private individual, it seems clear that he is in the actual possession of it, and of everything in it; and consequently he may maintain an action of trespass against any one who injures any monument in it. See Burn's Ec. L., 'Church, IIe.'

As to hard labour, &c., see *ante*, p. 895, vol. 1, p. 80, 81.

peace under this Act (*c*) and if such sums of money, together with costs (if ordered), shall not be paid either immediately after the conviction, or within such period as the justice shall at the time of the conviction appoint, the justice may commit the offender to the common gaol or house of correction, there to be imprisoned only, or to be imprisoned and kept to hard labour, as the justice shall think fit, for any term not exceeding two months, unless such sums and costs be sooner paid: provided that nothing herein contained shall extend to any case where the party acted under a fair and reasonable supposition that he had a right to do the act complained of, (*d*) nor to any trespass, not being wilful and malicious, committed in hunting, fishing, or in the pursuit of game, but that every such trespass shall be punishable in the same manner as if this Act had not passed.' (*e*)

Not to extend to certain cases herein named.

Preceding section to extend to trees.

Sec. 53. 'The provisions in the last preceding section contained shall extend to any person who shall wilfully or maliciously commit any injury to any tree, sapling, shrub, or underwood, for which no punishment is hereinbefore provided.' (*f*)

Damage to the amount of £5 must be done on one occasion to bring a case within sec. 51.

An indictment on the 24 & 25 Vict. c. 97, s. 51, alleged that the prisoner committed damage to the amount of five pounds on real and personal property; the evidence was that the damage, exceeding five pounds, was done on two following days, but the damage on either day did not amount to five pounds; it was objected that the indictment was not sustained, as it was not proved that damage exceeding five pounds was done at any one time; and it was held in Ireland, on a case reserved, that this evidence did not prove an offence within that section. (*g*)

The word 'maliciously,' in the 24 & 25 Vict. c. 97, s. 51, requires that an act to be criminal within that section should be done wilfully. A conviction under that section, for unlawfully and maliciously committing damage above the value of 5*l.* to a house, where the defendant, after fighting in a crowd in the street near the window of the house, separated himself from the crowd, picked up a stone, threw it at one of the persons with whom he had been

punishment for offences committed in the night was introduced principally with reference to Ireland, where malicious injuries seem often to be perpetrated in the night.

As to hard labour, &c., see *ante*, p. 895, vol. 1, pp. 80, 81.

(*c*) See sec. 64, Appendix.

(*d*) See Reg. *v.* The Justices of Richmond, 8 Cox, C. C. 314, and Reg. *v.* Dodson, 9 A. & E. 704, that it is a question for the magistrates under all the circumstances, whether the party acted under such fair and reasonable supposition that he had a right to do the act.

(*e*) This clause is taken from the 7 & 8 Geo. 4, c. 30, s. 24. There was a similar clause in the 14 & 15 Vict. c. 92, s. 3 (I.).

The former Act was defective in neither giving the power to award any fine in addition to the amount of the injury done, nor any imprisonment; the latter Act did both; and this clause authorizes the justice either to commit the offender or to fine him, in addition to the amount of the injury done.

This clause is altered in accordance with the 18 & 19 Vict. c. 126, s. 22, so that where the owner of the property injured is examined as a witness, he may receive compensation for the injury.

(*f*) This clause is new, and was introduced in consequence of Reg. *v.* Dodgson, 9 A. & E. 704, and Chanter *v.* Greame, 13 Q. B. 216. In the former case the court expressed a clear opinion that trees under the value of a shilling were within the 7 & 8 Geo. 4, c. 30, s. 24; in the latter the court expressed an almost equally clear opinion that they were not. This clause brings them within the preceding section, and it was very expedient that it should; for a malicious individual might destroy a newly planted wood with impunity by destroying a single tree at a time, and several flagrant instances of the kind had occurred.

(*g*) Reg. *v.* Williams, 9 Cox, C. C. 338.

fighting, missed his aim, and hit a plate-glass window above the value of 5*l.* in the house, but did not intend to break the window, was quashed. (*h*)

In an indictment under 24 & 25 Vict. c. 97, s. 51, for maliciously damaging personal property, the damage exceeding 5*l.*, it is not necessary to allege the value of each article injured, but only that the amount of the damage done to the several articles exceeded 5*l.* in the aggregate. (*i*)

(*h*) R. *v.* Pembleton, 43 L. J. M. C. 91; *et per* Blackburn, J., 'We have not to consider what may be malice aforethought at common law in cases of murder; the present is a statutory offence created by a statute relating to malicious injuries to property. When a person wilfully does an act to the injury of another without any lawful cause, the act is malicious. Here the act was without lawful excuse, but was it wilful? Upon the facts there was evidence upon which the jury might have found, if they had been so directed, that the act was malicious. If they had found that the prisoner was aware that the window was where it was, and that he was likely to break it, and was reckless whether he did so or not, the case might have been different, but they were not so directed, and have not so found. They have found that he did not intend to break the window. Therefore, I think the conviction must be quashed.'

(*i*) R. *v.* Thomas, 12 Cox, C. C. 54.

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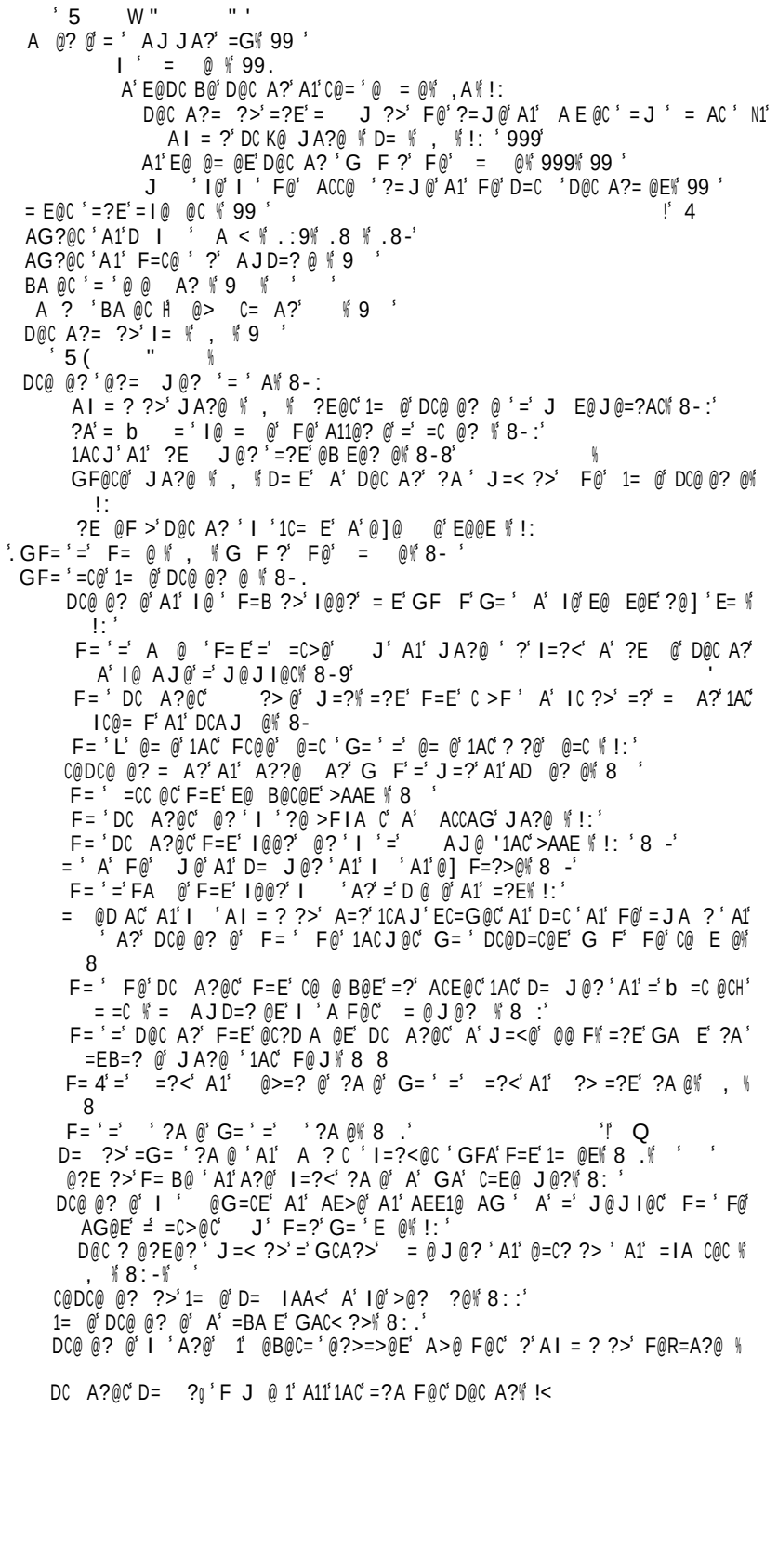

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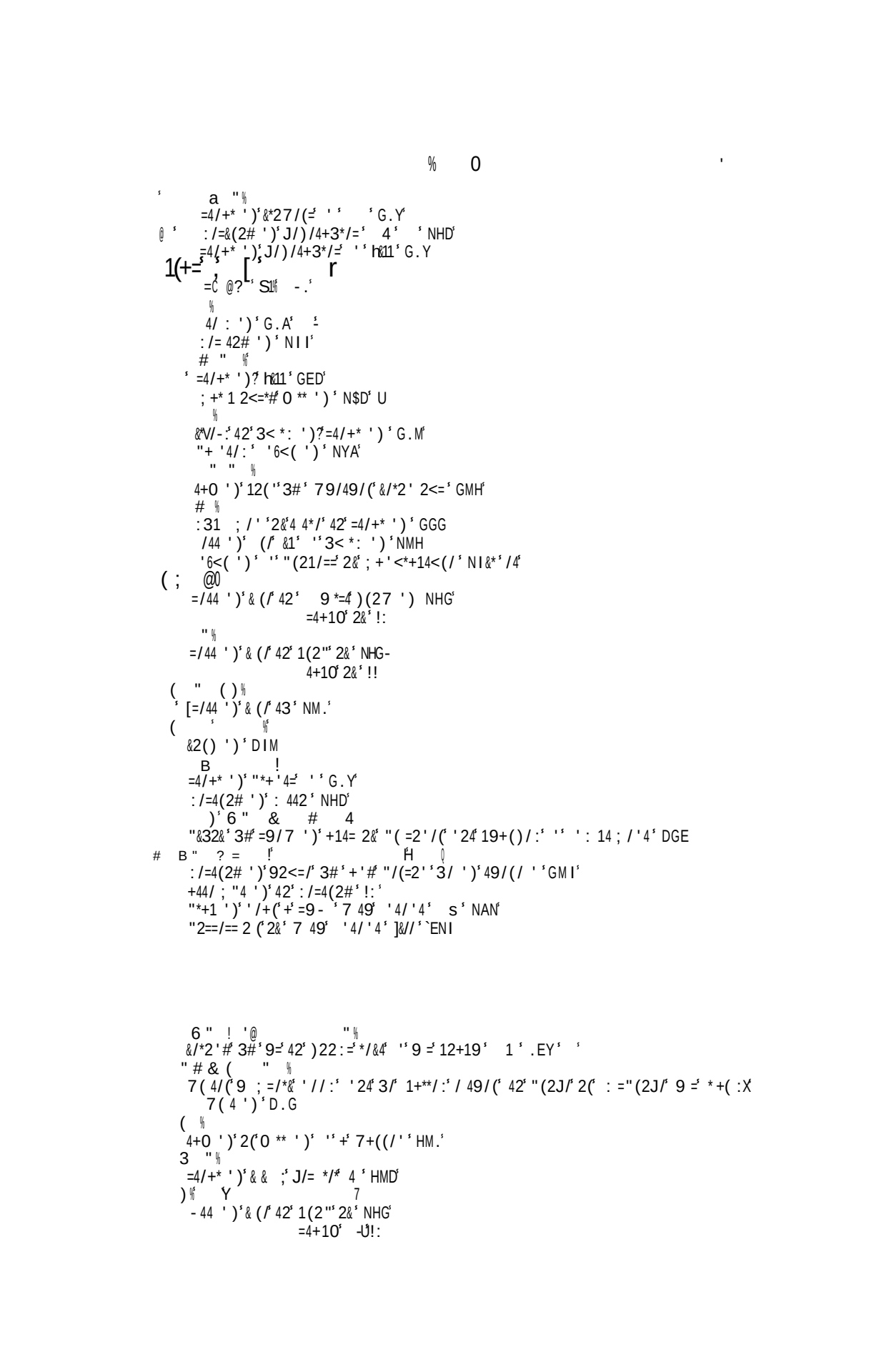
A F@C' D ? F J @? '1AC' FA @' ?' ' K ' ' :' . .
= ' 1AC>@C @ ' 1AC J @C ' =D = ' I Z@ ' A' D@?=' @CB E@' 1AC' 1@'
4 , ' !:
DC ? D= ' ?' 1 @' @ A?E' E@>C@@' =?E' = @ AC @ ' . 9'
A11@? @ ' = ' @=' ! '
?@' =?E' C@ @ ' !: '
F=CE' = I A C' !:
' A =C ' A?1 ?@ J @? ' . '
A ' A1' DCA @ A? ' !:
@] @? ' A1' ' !: '
4*'*4"2! 2 ' #! ' " 4"# 'C>#! !6 'E"4 ' 6 #' !# ' . : '
F@' C@=' @= ' 5C B ' @= ' , ' !: '
DCA @@E ?> ' ?' A C ' A1' (@ ACE' AC' b ' .': -'
A C ' ?A ' A1' (@ ACE' , ' !:
= @ ' = ' A' DC@ @?E ?>' A' = ' ?E@C' A ? ' A C ' DCA @ ' . : '
1AC> ?>' ? C J @? ' A1' @B E@? @' . : 8
ACE@C ' C@ A>? K=? @ ' =11 E=B ' ^1 ' . : '
" 6 ! 2' 4' <4'E>: ! '*> # ' 6 #' 4 <' 4*'E>: ! ' 4&E6 ! ' . : 9' ' '
1AC> ?>' C=? 1@C' =?E' @ @C ' A1' = AC?@ ' A' C=? 1@C' A <' . : 9' .88'
?= J @ ' A1' G ?@ @ ' F@C@ A' . : '
D@C A?= ?>' DCADC @ AC ' A1' A <' , ' . : 9' '
@?E@=BA C' A' C@ @ B@' E B E@?E' 11 @? ' .': '
J =< ?>' 1= @' @? C @ ' ?' IAA< ' A1' I =?<' !: '
@C< ' J =< ?>' A ' 1= @' E B E@?E' G=CC=? ' . 8 '
J =< ?>' 1= @' @? C @ ' ?' IAA< ' A1' * @ CADA =?' A=CE' !XR
@C< ' A1' * @ CADA =?' A=CE' J =< ?>' A ' 1= @' E B E@?E' & =CC=? ' !: '
1AC> ?>' A <' @C 1 = @ ' , ' A1' F=C@' ?' A < ' A1' =?<' A1' ?> ' '
=?E' !: '
D@C A?= ?>' AG?@ @' F@C@A1' .8
4@?>C=B ?>' D = @ ' 1AC' !:
1AC>@C ' A1' A <' @C 1 = @' @E' ?E@C!' " = A?= ' # @ I ' ' 9. '
.8
D@C A?= A?' E1' AG?@C ' A1' F' A <' .8-'
@?>C=B ?>' D = @ ' ^1@ ' 1AC' F' A <' @C 1 = @ ' !: '
1AC>@C ' A1' @] F@b @C' I ' .8 ' ' '
4*' < ' >"! ! ' 4*' < ' 6 ' 4*' U 2 6 # ' " 6 # ' 6 #' 4 < '" : 6 ' .89'
'
1AC> ?>' =?E' @C ?>' I =?<' ?A @ ' !:
D C F= ?>' AC' C@ @ B ?>' 1AC>@E' I =?<' ?A @ ' AC' F=B ?>' F J ' ?' DA @ T
A?' <?AG ?>' F@ J ' A' I @' 1AC>@E' !: '
J =1 ?> ' ?E' ?>' =?E' F=B ?>' ?' DA @ A?' =? ' 1C= J @' 1AC' J =< ?>'
D=D@C' , ' .8
@?>C=B ?>' A?' =? ' I =?<' ?A @' , ' AC' ?>' F' D = @' AC' F=B ?>' ' ?'
DA @ A?' .
@?>C=B ?>' A?' =? ' D = @' =? ' GACE' , ' C@ @ J I ?>' =? ' D=C ' A1' =? '
I =?<' ?A @' , ' AC' ?>' , ' AC' F=B ?>' ?' DA @ A?' @C' @C ?>'
, ' .
= @ ' A?' F@' 1b J @C' = @' . -' '
@] D ?> ?>' = R ?EAC @ J @? ' I ' @ J A?' Z @' F@ E' C= ?>' ?E@C'
9' ,' ' & ' ' !: '
DA @ A?' A1' =' 1AC>@E' ?A @' !: '
GF= ' A? @ ' =?' @C ?>' !<
'4>' ' '

(( ) ` 4 ! > #
F=B ?>' DA @ A?' A1' F' D=D@C%' . 9 '
A1' @C 1 = @ %' , %' C@ = ?>' F@C@ A%' !:
1AC> ?>' F@' F=?EGC ?>' A1' F@' C@ @ B@C >@?@C= ' A1' F@' DA A11 @%' !: '
bZC> ?>' E @M1AC' J =C< ?>' DA =>@%' !:
J =? 1= C ?>' AC' ?>' D=D@C' J =C' A' F= ' @E' 1AC' DA =>@' AB@C %'
.
C@ @ B ?>' D=D@C' 1AC' DA =>@' AB@C ' I @1AC@' ' ' = J D@E%' . -'
1AC> ?>' G=CC=? %' , %' C@ = ?>' A' F@'] F@b @C%' !: '
A ? @C1@ ?>' @C 1 = @ 'C@ = ?>' A'] F@b @C' I ' 1AC' C ? E=E%'
=?=%' ' =%' #A J ? =%' !: '
D1' F@' F=?E' A1' F@' C@= C@C' A1' F@' CE?=? @%' . :'
1AC>@ ' =?E' 1= @' D@C A?= A?' 1AC' F@' D CDA @' A1' A I = ? ?>' D= %' DC K@ '
% J A?@ %' , %' D@? A? %' , %' A1' A E @C ' =?E' = AC %' !: ' ' '
1AC> ?>' ?= J @ ' A1' A11 @C ' @? @E' A' DC K@ J A?@ %' AC' A1' A11 @C ' = '
F@ @=%' ^1@ %' !: '
1AC> ?>' F@ @=' D@? A? %' F@%' . 8
' ' ?A ' ?@ @ =C ' F= ' F@' D@? A?' A' GF F' F@' EA J @?' C@ = @ '
FA E' I @' = = ' I ?>%' . '
E J C= ' %' @C ?>' 1= @' D@ A? %' ' ^1@ %' . 9'
C@> @C ' A1' F@' = A?@C H A J D=? %' . '
C@> @C' A1' J @E = ' DC= A?@C %' !: '
C@> @C' A1' DF=C J = @ = ' F@ J %' . -'
5F=C J = ' %' 9 9%' .
1AC> ?>' @C 1 = @ ' 1AC' F= 1 D= %' ?E@C' F@' -' ,' ' & ' :%' ' %' 9 '
' AC> ?>' @C 1 = @ ' A1' @CB @' ?' F@' ?=B %' AC' DCA @ A? ' 1CA J ' F'
@CB @%' !:
1AC> ?>' = >? J @? ' A1' D@? A? %' ^< %' !:
1AC> ?>' DAG@C' A1' = AC?@ ' A' C@ @ B@' DC K@ J A?@ %' 9 -
' J @C I AA< %' @B E@? @%' !:
C@ = ?>' A' J @C F=? ' @= J =?H ' 1 ?E%' 9 ' '
' @= J @?H ' =B ?> ' I =?< %' !: '
A1' @C 1 = @ %' , %' C@ = ?>' A' F@' =B@' C=E@%' !: '
A1' b =C=? ?@' @C 1 =& %' 9 :
?= J @' A1' = A ? 4? >@?@C= ' =?E' A11 @C ' A1' A C ' A1' F=? @C %' 9 '
Z E>@' A1' =?E@E' = @ ' A C %' !: '
A11 @C ' A1' =? ' A C %' !:
A1' =?' A11 @' AD ' A1' F@' C@DAC ' A1' F@' = A ? =? >@?@C= %' =?E' A1' ='
@C 1 = @' A1' A?@' A1' F@' = F @C ' A1' F@' I =?<%' !: '
@C 1 = @ %' , %' ?E@C' * @C F=? ' @= J @?H ' %' 9 '
J =CC =>@' @? @' AC' @C 1 = @%' !: '
C@> @C ' A1' I C F %' I =D J %' J =CC =>@ %' , %' !: '
1= @' @? C @ ' ?' AD @ ' A1' C@> @C %' 9 .'
E@ CA ?>' F' AD @ %' , %' !:
> B ?>' 1= @' ?1AC J = A?' A' C@> C=C %' 9 9'
1= @' = @ J @? ' J ' I @' ? @? A?= %' 9 '
G = ' = ?>' =' 1= @' @? C ' A' I @' J =E@%' 9 '
?E J @? ' 1AC' E@ CA ?>%' E@1= ?>%' =?E' ?Z C ?>' =' C@> @C%' !: '
1= @' ?A @ ' =?E' @C 1 = @ ' A1' J =CC =>@%' 9 '
A1' C@> @C ' E@DA @E' ?E@C' F@' ' ,' :' 3 @ ' ' -%' !: '
A1' =? ' C@> @C%' , %' A? @C? ?>' 1@' =?? @ %' 9 -%' 9 '
A1' J @ J AC = %' , %' A1' F@' C@> C ' A1' E@@E %' 9 :'
1= @' = @ J @? %' , Z ?E@C' C=? 1@C' A1' =?E' %' !: '
DDC@ A?' b1' E@@E %' , %' ?E@C' F@' # @ =C= A?' A1' @' %' 9 8'
A1' E@ =C= A?' A1' D C?' A1' DC@ J J ' A?' =' DA ' A1' ? C=? @%' 9 '
A1' F@' ?= J @' AC' F=?EGC ?>' A1' F@' A J J D?@C ' A1' F@' GAAE ' =?E'
1AC@ %
@? @ ' 1AC' =CC =>@ %' 9 .

H =' G

(( )‘ ` 4 ! > #‘ 4
4*‘E"! 6 ‘E6E " ‘ >"! ! ‘6 #‘#4 >& ‘9 ‘
DC@ @?‘@?= J@? ‘ = ‘ A‘ !:
1AC> ?>‘ G ‘ I ‘?A @ ‘ 4 ‘!:
1AC> ?>‘E@@E ‘ IA?E ‘ ACE@C ‘1AC‘E@ B@C ‘A1‘‘AAE ‘C@ ‘D ‘1@ ‘
1C= E @? ‘ J=< ?>‘ , ‘ I ‘ , ‘ I ‘DCA C= A?‘ 9- ‘
A I @C= ?>‘ CA ?>‘A?‘ F@b @ ‘ !:‘
1AC> ?>‘ A C‘CA ‘ !:‘
= @‘E@ E@E‘A?‘DC@ @?‘@?= J@? ‘ 9--‘
= @‘A?‘C@D@= @E‘ = @ ‘ 9::‘
= @‘ DA?‘ F@‘C@D@= @E‘ = @ ‘= ‘ A‘E@@ ‘‘ I ‘ =?E‘?A @ ‘ 9-8‘
DAG@C‘A1‘= AC?@ ‘ ‘=‘E@@E‘ !:‘ ‘ ‘
@C ?>‘ A F‘?A @‘ ?‘ ?> =?E‘ !:
DCAJ AC ‘?A @‘1AC‘D= J@?‘A1‘A?@‘> ?@=‘ AC‘ = F‘A1 =?<‘A1‘
?> =?E‘?A @‘ 9-
I ‘‘EC=G?‘ DA?‘ AJJ A?@C‘A1‘?=B ‘F@ E‘=‘I ‘A1‘@] F=?>@‘
:
1AC> ?>‘=? ‘ ?EAC @J@?‘ 11 @? ‘ 9-.
= @‘A1‘=‘DCAJ AC ‘?A @‘GF F‘G= ‘?A ‘?@>A =I @‘ 9-9
=‘DA ‘E= @E‘ F@b] @‘ 9-
1AC> ?>‘ =‘ I ‘ D= =I @‘ A‘ DC A?@CH‘ AG?‘ ACE@C‘ =?E‘ @C ?>‘ ‘
‘G FA ‘ ?EAC @J@? ‘ !:‘ ‘ ^L
I ‘A1‘@] F=?>@‘ E@1@ B@‘GF@?‘ = @D =? @‘G@C@‘1AC>@E‘ DA?‘
F@J ‘ 9
= @‘A?‘C@D@= @E‘ = @ ‘= ‘ A‘X ?E@C =< ?>‘1AC‘ F@‘D= J@?‘A1‘
JA?@ ‘ !:
= @‘A?‘C@D@= @E‘ = @ ‘= ‘ A‘C@ @D ‘ 9 -‘ ‘
7C@ @B@E‘ F@‘ A? @? ‘ =IAB@‘ I ‘J@‘ ‘ & ‘H =‘ 1 ‘ @?‘
= @J@?‘A1‘ F@‘C@ @D ‘ ?‘ F@‘ ?E J@? ‘ !:
=?‘ @? C ‘A1‘ F@‘C@ @D ‘A1‘JA?@ ‘AC‘?A @L‘ J=E@‘I ‘
=‘ = F@C‘A1‘ F@‘ I=?<‘ ‘ =?‘6 4> 6: ‘C@ @D ‘1AC‘
F@‘D= J@?‘A1‘JA?@ ‘ 9 ‘ 4
1AC>@E‘ @? C @ ‘ ?‘ I=?<@C H D= IAA< ‘ =C@‘ = A ?=I @‘
C@ @D ‘ 9 ‘ ‘ ‘ ‘
F@‘ J@C@‘ >? ?>‘ @C = ?‘ ?=J@k‘A‘=?‘= >?J@?‘1AC‘D= T
J@?‘A1‘=‘ J‘ ?‘ =‘ ?=B ‘I ‘ EA@‘?A ‘D CDAC ‘A‘I@‘ =‘
C@ @D ‘ 9 8
=‘ >?= C@‘Z?= ‘I@‘DCAB@E‘A‘ I@‘ =‘C@ @D ‘ 9 ‘
?E J@? ‘1AC‘1AC> ?>‘ F@‘GACE‘T @ @E‘H 9 .‘ ‘ ‘
?E J@?‘1AC 1AC> ?>‘F >F‘ A? =I @H‘C@ @D ‘ 9 9‘
JDAC‘A1‘ F@‘GACE‘TD= E‘H = ‘ F@‘ IA AJ‘A1‘=‘ I ‘ !:‘
?E J@?‘1AC‘1AC> ?>‘=‘C@ @D ‘ >?@E‘G F‘ ? = ‘ 9 ‘
1AC> ?>‘C@ @D ‘1AC‘ I @? @‘JA?@ ‘1AC‘ F@‘ =CJ ‘ 9: ‘
= @C ?>‘ J‘ ?‘F >F‘ A? =I @H‘C@ @D ‘ 9: ‘
=‘ C D‘C@ @D ‘?A ‘1 @E‘ D‘ 9:-
=‘ C D‘ @C 1 = @‘A1‘=‘C= G= ‘ AJD=? ‘ ‘?A ‘=‘C@ @D ‘
= b =? @‘AC‘= A ? =I @‘C@ @D ‘ !: (‘ !
J@JAC=?E J‘ JDAC ?>‘D= J@? ‘ I ‘?A ‘=‘C@ @D ‘ 9:8‘
=?‘=>C@@J@?‘ A? = ? ?>‘=‘C@ @D ‘ !:‘
C@ @D ‘ @E‘ A‘@]A?@C= @‘=‘ @ = ACH‘@ = @‘ !:‘
1AC> ?>‘ =‘ C@ @D ‘ ?‘ CE@C‘ A‘1A ?E‘=‘ = J‘A1‘D= J@?‘
F@C@A?‘=>= ? ‘=‘ F CE‘D@C A?‘ 9: ‘
= ‘A‘ F@‘C >F‘A1‘ F@‘DC A?@C‘ A‘D ‘ F@‘DCA @ AC‘ A‘F ‘
@@ A?‘A1‘B=C A ‘1AC>@E‘C@ @D g‘ !:‘
=‘ >?= C@‘ A‘=‘DA A11 @‘ACEk‘H ‘=‘C@ @D ‘ !:‘
=‘ @ @D‘1AC‘ A ‘?‘=?‘= A?‘ 9:.‘
=‘D=G?ICA<@ H‘E D = @‘q ‘
=‘ ‘F= C@‘A1‘=‘G ?@ ‘A?‘=?‘ACE@C‘1AC‘ A ‘ :

) ` 4 ! > #
GF@C@' GACE' C@ @ D ' ?A ' J @? A?@E%' 9: '
=' C@ @ D ' 1AC' >AAE %' !<
= @ ' A?' C@D@= @E' = @ ' = ' A' 56""6 ' AC' 4"# " ' 1AC' D= J @? '
4A1' JA?@ %' ^1 % 98 %' '
F@' = @' ?A ' A?1 ?@E' A! AJ J @C = ' C=? = A? %' !: '
I ' A1' @] F=?>@' J = ' I@' = E' = ' G=CC=? ' AC' ACE@C ' 1AC' F@'
D= J @? ' A1' JA?@ %' 98
? C J @? ' A? E@C@E' = ' F%' !: '
? ?@@' A1' GF= ' ' ?A ' =?' ACE@C%' , %' !: '
F@' G=CC=? ' AC' ACE@C' J ' D CDAC ' A' F=B@' I@@?' J =E@' I '
A?@' F=B ?>' = FAC %' ^1@ % 98-
=' ?A @' A' =' FAD<@@D@C' ?' F@' ?= J @' A1' =?' AB@C @@C' ?A '
G F ?' F@' = @%' !:
=' ?A @' A' =' C=E@ J =?%' C@b @ ?>' F J ' A' @ ' F@' I@=C@C'
F=B@' >AAE %' , %' !: ' %
=?' ACE@C' 1AC' F@' D CDA @' A1' AI = ? ?>' =' C@G=CE' 1AC' F@'
=DDC@F@? A?' A1' =' B=>C=? %' !: '
ACE@C' DA?' F@' C@= C@C' A1' =' A ? %' 98 '
' A >F ' A' =DD@=C' ?' F@' ?E J @? %' F= ' F@' D@C A?'
GFA @' ?= J @' ' I C I@E' F=E' = FAC %' ^< % 98 :'
1! ' E>"E4" ' A' I@' A?@' F@' D=C ' F=E' =' C >F ' A' J =<@%'
' ' 11 @? %' 98
F@' ACE@C' ?@@E' ?A ' I@' E C@ @E' A' F@' FA E@C' AC' D@C A?'
? @C@ @E' ?' AC' F=B ?>' DA @ A?' A1' F@' >AAE %' 988'
=' 1AC>@E' ACE@C' A?' =' I=?<@C%' FA >F' ?' =' 1 A ' ?= J @%' '
G F ?' F@' = @%' 98
F@' ACE@C' A >F ' A' J DAC ' F= ' F@' D=C ' J =< ?>' ' F=E' ='
E DA ?>' DAG@C%' AC' F@C@' A >F ' A' I@' DCAA1' F= ' F@' I=E'
F' DAG@C%' 98 .%' '
' J = ' I@' =?' ACE@C%' FA >F' F@C@' =C@' ?A' 1 ?Ey ' ?' F@' F=?E '
A1' F@' EC=G@@%' 989
1AC@ >?' @ @C' =EEC@ @E' A' =' ACC@ DA?E@? ' F@C@%' 98 '
=? 'ACE@C' A' 1= ' =' J ' ?' =EB=? @' A1' =?' ? @?E@E' BA =>@%'
9 4
= AC H F DD ?>' ?A @ %' !:
?E J @? ' = ?>' F@' J ' J @? A?@E' ?' =' 1AC>@E' ACE@C'
>AAE%' 9 -
1' =?' ? C J @? ' I@' I A F' =' G=CC=? ' =?E' ACE@C' ' J = ' I@'
A' E@ C I@E' ?' F@' ?E J @? %' 9 '
F@' D@ 1 = A?' A1' >AAE ' ?' F@' ACE@C%' 9 :'
=?' ACE@C' A' = @' G ?@%' !:
= @' A1' =?U ACE@C' ?A ' =B= =I @' I ' C@= A?' A1' AJ@' A = @C= '
AIZ@ A?%' 9 8
G=CC=? ' 1AC' D= J @? ' A1' JA?@ %' 9 % ' ' '
= FAC ' A' C@ @ B@' JA?@ ' E@DA @E' A?' = A ? =I @'
C@ @ D %' 9
=? ' ? C J @? ' ?E@C' GF F%' 1' >@? ?@%' F@' D= @C' J >F '
C@ AB@C' F@' = J A ? ' =>= ? ' F@' >?@C' A1' %' '=' G=CC=? %'
9 .
E ? A?' I@ G@@?' =' G=CC=? ' =?E' ACE@C%' 9 9'
= FAC ' A' EC=G' JA?@ %' 9
@C 1 = @' A1' E@= F' A1' =' J @ J I@C' A1' =' E A B@E' AE>@' A1'
' EE' @ AG %' !:
' A1' =?' @] ?>' AE>@%' 9. '
C>@A?H ' @C 1 = @' A1' <' GAC< J =?%' !: '
= A ? ' A1' G=>@ ' >?@E' I ' =' 1AC@ J =?%' 9. -'
@C 1 = @' A1' >AAE' A?E ' A1' =' A B A %' !<



% %
@ ?>' 1 C@' A%' GF ' >CAG ?>%' -'
= <' A1%' !:

5 # %
F C ?>' AC' E@ CA ?>%' - '
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A11@=@@ ' %' =>= ? ' =C @? ' %' - . '
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DC ? D= ' ?' R@ A?E' E@>C@@' =?E' = @ AC @ %' !: '
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J = A ' < ?>%' - .'
` @@' ' V ? / B#> &
Pc I = ' %' 1AC' F@' D CDA @ ' A1' I C> =C %' :%' '
FA @ I C@=< ?>%' +
@ ?>' 1 C@' A%' =? ' D@C A?' I @ ?>' F@C@ ?%' '
G F' D;@F ' A' ?Z C@%' '
E@ CA ?>%' ^< %' G F' > ?DAGE@C%' :'
@?=? ' ?Z C ?>%' - '
@= ?>' ?%' G F' J @?= @ %' '
A' F@' B= @' A1' ' E

VD 2 3 . B # !
GF= ' ' %' 89
I C@=< ?>' =?E' @? @C ?>' =' EG@ ?>FA @' =?E' A J J ?>' =' 1@ @? %'
' 8 9
G F' L @ ? ' A' AA J %' ^<@%' . '
EA@ ' ?A ' @] @?E' A' I E ?> ' G F ?' Z'@ 1C =>@%' 89'
DC ? D= @' ?' @ A?E' E@>C@@' =?E' = @ AC @ %' '
I CA=< ?>' =?E' @? @C ?>' ?@ @ =C ' A' A? @%' !:
J ' I @' = @?E@E' G F' A J @M@ A? %' 8 '
EG@ ?> FA @%' b @ A?' = ' A' GF= ' F= ' I @' E@@ J @E%' =J@%' = ' ?' I CT
> =C %' ' '
I @ ?>' ?' I ' = >F ' G F' ? @? %' E %' '
F=B ?>' ? C J @? ' I ' ? >F ' G F' ? @? %' ^< %' !:
" " %'
E@@C%' - .

! " # %
G=CC=? %' @= * >%' - - '
1AC> ?>%' . 9
@C 1 = @ ' =?E' A DA? %' *4"2! 2 '
" # * " %
1AC' I C> =C %' : %' ' 2
A11@? @' ?' A?@' A ? %' C = ' ?' =?A F@C%' : '
1AC' CA I I @C %' 9%' ' '
1AC' =C @? %' - %' ' '
1AC' @= ?>' 1CA J ' F@' D@C A?%' -9 8'
1AC' @ J I @KK @ J @? %4' 9%' ' '
A1' I =?<C D %' : : :%' 6 '

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L " # * " `

1AC C@ @ B ?>' A @?' >AAE % : . 9% ' '

1AC =' F@= % 8-

1AC A I = ? ?>' J A?@ ' I ' 1= @' DC@ @ @ % 89 : % ' '

1AC 1AC>@C % , A %49 8% ' '

1AC =C A?% 9% ' ' '

1AC J = J ?>' = @%

B@? @% ?' A11@? @ ' C@ D@ ?>' F@' DA A1 A@% : '

' ?' =?' ?E J @? ' 1AC C@ @ B ?>' A @?' >AAE % : 8'

' 1AC 1AC>@C % . 8'

?' ?E J @? ' 1AC J = A ' ?Z C @ % 9 8'

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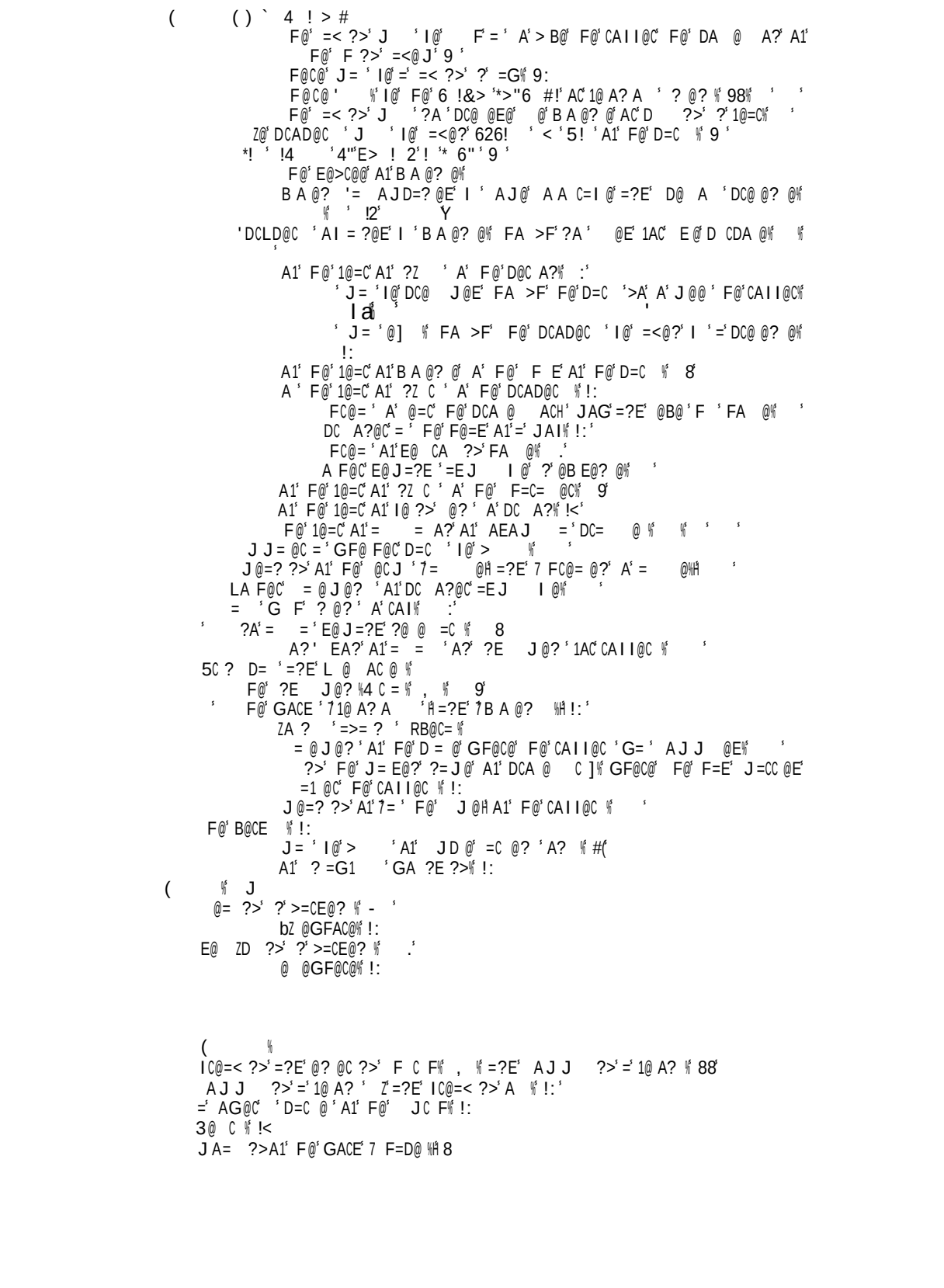

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